Contested boundaries: E-scooter riders' and pedestrians' experiences of sharing space

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Abstract

Globally, e-scooters have become a popular mode of transport with the arrival of shared e-scooter services in cities and the availability of e-scooters for private purchase. E-scooters represent an exciting opportunity to reduce reliance on cars and address environmental and health concerns associated with car-based travel. However, the lack of designated transport space for e-scooters has caused contention because e-scooter riders share space with other transport users. The use of e-scooters on footpaths has faced opposition from walking and disability advocacy groups because of the potential danger and disruption that e-scooters pose to pedestrians. Previous research has highlighted the challenges and tensions of different transport users sharing space, however, the relative novelty of e-scooters means that research investigating experiences of riding e-scooters and sharing space with pedestrians is limited. This study aimed to explore e-scooter riders' and pedestrians' experiences of sharing transport space in Christchurch, New Zealand, and examine what their experiences mean for transitioning towards healthy and sustainable travel practices.

In-depth interviews were conducted with twelve participants who had experienced sharing space as an e-scooter rider, a pedestrian or both. A thematic analysis of the interview data highlighted the complexities of e-scooter riders' and pedestrians' everyday experiences of sharing space and the micropolitics of their encounters. E-scooter riders and pedestrians discussed the challenges of negotiating encounters because of the divergent ways that they move through space, communicate and coordinate their movements with others. They drew attention to how claims to space are made sense of in relation to meanings about people, spaces and objects, and the ways that these meanings are drawn on to construct e-scooter riders as (il)legitimate path users. The participants associated some of the challenges of e-scooter riders and pedestrians sharing space with the regulatory and commercial contexts of e-scooters, and highlighted the need to address these macro-level structures. The findings of this study illustrate the ways that e-scooters add complexity to spaces shared with pedestrians because e-scooters blur boundaries with other modes of transport, and the social and spatial conditions of e-scooter riders' and pedestrians' encounters are shaped by a transport system that prioritises car-based travel.

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Chapter 1: Introduction and background

Electric kick scooters (e-scooters) are an emerging form of transport, and have become commonplace in cities around the world, including Christchurch, New Zealand, with the launch of shared e-scooter services and with the availability of e-scooters for purchase. E-scooters have the potential to encourage societal shifts towards less car-dominated travel practices, and address the health and environmental concerns associated with car dominance. However, e-scooters add complexity to transport systems because they are used in spaces shared with pedestrians, cyclists and motorists, and there is a lack of clear e-scooter regulations (Tuncer, Laurier, Brown, & Licoppe, 2020). The use of e-scooters on footpaths is contentious because of their potential to create unsafe conditions and impact pedestrians' experiences of walking (Sikka, Vila, Stratton, Ghassemi, & Pourmand, 2019). While research on e-scooters is growing, little is known about e-scooter riders' and pedestrians' experiences of interacting in shared transport spaces, and the implications of the increasing popularity of e-scooters. The aim of this research project was to address this gap in the literature and explore e-scooter riders' and pedestrians' experiences of sharing space in Christchurch.

This chapter begins by highlighting the importance of transitioning transport systems towards low-carbon travel practices for planetary and human health, and discussing the potential for e-scooters to support this transition. The next section outlines the recent arrival of e-scooter companies in cities and the existing e-scooter regulations in New Zealand. The final section explores issues with the use of e-scooters on footpaths and different approaches to minimising conflicts between e-scooter riders and pedestrians.

Transport, health and e-scooters

Transforming transport systems is imperative to mitigate the impacts of climate change and improve public health. Increasing anthropogenic greenhouse gas emissions have resulted in climatic change, which is being experienced with the occurrence of extreme weather, flooding, droughts and rising temperatures, and this has consequences for mental and physical health (Bennett et al., 2014). In many societies, automobility is the dominant mobility paradigm, which gives precedence to travelling by car and the systems that support car use, and contributes to greenhouse gas emissions (Hopkins & Stephenson, 2016). This is the case in New Zealand where travelling as a driver or passenger in a motor vehicle accounts for 82% of the total travel time (Ministry of Transport, 2017). New Zealand's road transport emissions, from freight and passenger vehicles, have increased by 93.4% since 1990 and account for

17.9% of gross emissions (Ministry for the Environment, 2019). There is consensus that transitioning away from high-carbon forms of transport has co-benefits for climate change mitigation and health (C. Shaw, Hales, Howden-Chapman, & Edwards, 2014; Watts et al., 2017; Woodcock, Banister, Edwards, Prentice, & Roberts, 2007). This is because reliance on internal combustion engine vehicles for transport contributes to adverse health outcomes, including those caused by road crashes, air pollution, noise, stress and physical inactivity (Macmillan et al., 2014; Woodcock et al., 2007). The adoption of electric transport, including electric vehicles and e-scooters, may address environmental and health issues related to high-carbon transport (Ministry for the Environment, 2018).

Shared e-scooter companies promote their services as a way to encourage a modal shift away from cars for short-distance trips, reduce traffic congestion and pollution, and provide a solution for the "last mile" problem (Bird, 2019; Lime, 2019). The last mile problem refers to the inadequate transport options between a public transport hub and the final destination, such as home and work (Maiti, Vinayaga-Sureshkanth, Jadliwala, & Wijewickrama, 2019). In low-density cities, public transport services are often inhibited by the last mile problem and the connectivity of these services can be an issue for urban commuters (Lo, Mintrom, Robinson, & Thomas, 2020). Furthermore, sprawling land use patterns and a lack of active transport infrastructure are prevalent in low-density cities and can discourage engagement in walking and cycling (C. Shaw, Russell, van Sparrentak, Merrett, & Clegg, 2016; Tin Tin, Woodward, Thornley, & Ameratunga, 2009). Riding an e-scooter may be a suitable transport option in low-density cities where urban planning has prioritised car-based travel and subordinated public and active transport. For example, in New Zealand urban areas, nearly one third of all car trips are less than 2 kilometres and nearly two thirds are less than 5 kilometres (Mandic et al., 2019). However, cars are often relied on because of the temporalities and spatialities of everyday activities that necessitate complex travel patterns (Bean, Kearns, & Collins, 2008; Cass & Faulconbridge, 2016). Although e-scooters have the potential to expand transport possibilities, the socio-spatial practices of daily life present a challenge to discouraging reliance on cars.

Whilst there are benefits of reducing reliance on car-based travel, the environmental and health benefits of e-scooters are equivocal. Determining whether e-scooter use is directly replacing driving is problematic, because rather than replacing an existing mode of transport, e-scooter use may transform travel practices (Tuncer & Brown, 2020). For example, riding an e-scooter may complement the use of another mode of transport, encourage individuals to take additional trips or alter the route or reach of a trip (Curl & Fitt, 2020; Fitt & Curl, 2019). However, several

studies have surveyed e-scooter riders to determine what type of trips are being replaced, and despite the variation in size of these surveys, they identified that a significant number of active transport trips are being displaced by e-scooter trips (Fitt & Curl, 2019; Hollingsworth, Copeland, & Johnson, 2019; James, Swiderski, Hicks, Teoman, & Buehler, 2019; Moreau et al., 2020; Portland Bureau of Transportation, 2019). Life cycle assessments of e-scooters have found that shared e-scooters have a greater environmental impact than the active and public modes of transport that they displace, however, there is likely to be a reduction in the environmental impact when e-scooter use replaces personal car journeys (Hollingsworth et al., 2019; Moreau et al., 2020). This is because of the short life-span of shared, dockless e-scooters, and the resources required for the manufacturing, maintenance, collection and charging of e-scooters[1] (Hollingsworth et al., 2019; Moreau et al., 2020). A study conducted in Raleigh, North Carolina found that 43% of the life cycle impacts were attributed to the collection and distribution of e-scooters, typically carried out using private motor vehicles (Hollingsworth et al., 2019); whilst a similar study conducted in the more densely developed Brussels found that the impacts of collection and distribution were significantly less (Moreau et al., 2020). It should be acknowledged that privately owned e-scooters are likely to have a lesser environmental impact than shared e-scooters because they do not require the same resources used for collection and distribution, and are likely to have a longer life-span.

The health benefits of increasing the uptake of e-scooter riding are unclear. E-scooters have been labelled as a growing "public health problem" because of the spate of injuries that have occurred with the availability of shared e-scooters (Rivara, 2019). Multiple studies have quantified and characterised injuries sustained by e-scooter riders who have presented at hospitals and emergency departments (Badeau et al., 2019; Portland Bureau of Transportation, 2019; Trivedi et al., 2019). These studies have identified safety issues such as e-scooters being ridden without helmets (Kobayashi et al., 2019), at high speeds and on uneven surfaces (Munro, Monk, Campbell, Wong, & Bahho, 2019) and under the influence of alcohol (Bekhit, Le Fevre, & Bergin, 2019). Munro and colleagues (2019) carried out a retrospective study to identify e-scooter-related injuries that required orthopaedic surgery at Auckland City Hospital; they found that the high-energy injuries were comparable to those sustained in motor vehicle accidents or falling from a substantial height. A separate retrospective study of e-scooter-related injuries

[1] Dockless e-scooters are free-floating on city streets, rather than being returned to a docking station (Fang, Agrawal, Steele, Hunter, & Hooper, 2018). Dockless e-scooters are located, unlocked and paid for using a smartphone app, and are collected, usually overnight, by independent contractors who charge them and then return them to a predetermined location.

presenting at Auckland healthcare providers found that 60 per 100,000 e-scooter trips resulted in injury and 20 per 100,000 trips resulted in hospital presentation (Bekhit et al., 2019). Whilst the injuries sustained by e-scooter riders are well documented, less attention has been paid to the injuries endured by pedestrians as a result of encounters with e-scooters. Trivedi and colleagues (2019) identified incidences that resulted in injury for non-riders such as a collision, tripping over a parked e-scooter or trying to move an e-scooter. Sikka and colleagues (2019) highlighted the physical and financial harm caused when a pedestrian was struck by an e-scooter rider and sustained multiple injuries.

This portrayal of e-scooters as a "public health problem" because of physical injuries overlooks the broad conceptualisation of public health, and the various pros and cons of e-scooters in relation to environmental and health impacts. E-scooters have the potential to positively impact mental and social wellbeing by offering a fun transport option and a way to connect with people and place (Macmillan, 2019). Furthermore, there are environmental and health benefits of reducing reliance on cars and taking up electric modes of transport, including reducing noise and air pollution (Ministry for the Environment, 2018). Active modes of transport, however, have the potential to realise the environmental and health benefits of electric transport and increase physical activity. The government recognises these benefits of active transport and the Government Policy Statement on Land Transport has highlighted the need for transport planning to make these modes more attractive and accessible (Ministry of Transport, 2020). It is unclear what the uptake of e-scooter riding means for the government's ambition to increase engagement in active modes of transport, and there are contradictory standpoints on whether e-scooters are categorised as active transport (Hoek, Thomson, Wilson, & Shaw, 2019; Portland Bureau of Transportation, 2019). It has been suggested that e-scooters could make active modes of transport more accessible (Auckland Council, 2019a), however, as outlined above, riding an e-scooter may transform travel practices in various ways so establishing the relationship of e-scooter riding to physical activity is complex.

In the context of transitioning towards healthy and sustainable transport systems, it is important to consider what the availability of e-scooters means for equity. In car-dominated transport systems, people who do not drive are disadvantaged, such as young people, older adults, those with disabilities, or those who cannot afford to own a car (Green, Steinbach, & Datta, 2012). The availability of e-scooters could improve health by providing access to transportation and therefore access to employment, education, essential services and social networks. However, the equity and inclusiveness of e-scooter services has been questioned because e-scooters are

more likely to be used by people who are young, male and able-bodied (Curl & Fitt, 2020; Krizek & McGuckin, 2019; Portland Bureau of Transportation, 2020). There are also issues with the distribution and cost of e-scooter services and some cities are seeking to address these, such as in Portland, Oregon, where the local government required e-scooter companies to distribute e-scooters in underserved communities and offer discounted fares to low-income groups (Portland Bureau of Transportation, 2019). Groups of people who experience transport disadvantage in car-dominated transport systems may rely on walking as a mode of transport. Compared to other age groups, young people and older adults spend a greater proportion of total travel time walking (Ministry of Transport, 2017), which might be because they do not have an independent alternative to walking, they make more local trips or they travel less overall. Whilst access to transport could be improved with the availability of e-scooters, the presence of e-scooters on footpaths could impact pedestrians' access to transport and the government's ambition of increasing engagement in active travel.

The context of e-scooters in New Zealand

In recent years, there has been an international proliferation of micromobility, described as part of a "technology induced paradigm shift in transportation" (McKenzie, 2019, p. 19). Micromobility is an umbrella term that refers to several types of transport, including e-scooters, e-bikes, e-skateboards, hoverboards, YikeBikes and Segways, and shared micromobility services often provide e-scooters and non-electric bicycles. Micromobility modes are generally human-sized and enabled by advancements in technology, as well as being characterised by having an electric battery, allowing flexible routes, and by their speed and weight (Dediu, 2019; DuPuis, Griess, & Klein, 2019; Zarif, Pankratz, & Kelman, 2019). Shared micromobility services have launched in cities around the world, including in New Zealand where e-scooters have been dispatched in towns and cities. In October 2018, the e-scooter company Lime introduced e-scooters in Auckland and Christchurch, and later in the Hutt Valley and Dunedin[2] (Fletcher, 2018). Following an initial trial period in the city, Christchurch City Council granted Lime a permit to operate with 1000 scooters in February 2019 (Christchurch City Council, 2019a). In 2019, two further e-scooter companies, Beam and Flamingo, were given permission to operate in Christchurch on a trial basis, with 300 scooters each[3] (Christchurch City Council,

[2] Subsequently, other e-scooter companies which have been granted licenses to operate in New Zealand towns and cities including Beam, Flamingo, Neuron, Wave, JUMP and Lava.

[3] Lime, Beam and Flamingo were the e-scooter companies operating in Christchurch when this research project was conducted.

2019b). Christchurch has a population of just over 369,000 people, and the local conditions, including the city's polycentric urban form, flat topography and temperate climate, potentially make riding an e-scooter a suitable transport option (Fitt, 2017; Stats NZ, 2020). In New Zealand, there has also been an upsurge of privately owned e-scooters; news articles have reported an increase in sales, with devices being available for purchase online and from stores (Clent, 2019; A. Shaw, 2019).

In some cities, the arrival of e-scooters has caused tension because of their sudden influx, the lack of communication between e-scooter companies and governments, and the paucity of micromobility regulations (DuPuis et al., 2019). In New Zealand, the use of e-scooters is regulated by the Land Transport (Road User) Rules (2004). These rules were developed following public consultation regarding the transport category that e-scooters fall within, "wheeled recreational devices," and prior to e-scooters becoming a popular mode of transport (New Zealand Government, 2004). In the early 2000s, the government recognised that skateboards, in-line roller skates and non-electric scooters were increasingly used for transportation, and sought public feedback on the proposal to allow these wheeled recreational devices to use footpaths. Despite the opposition towards these devices being used on the footpath and travelling at high speeds, the Road User Rules (2004) allow users of these devices to have, what has been described as, "free rein" of the transport system (Pennington, 2019b). These regulations remain unchanged today and permit e-scooter riders to ride on roads, footpaths[4], designated shared paths and separated cycle paths (Figure 1), but not in on-road cycle lanes (Figure 2), and do not provide speed limits for e-scooters (New Zealand Transport Agency, 2019a). However, in Christchurch, some separated cycle paths have been designated by bylaw as for "cycles only" (Cycling in Christchurch, 2018). The designation of transport space for e-scooters in Christchurch could be the result of regulation that did not foresee the pervasiveness of new modes of transport, such as e-scooters. The use of e-scooters is regulated by Road User Rule 11.1, which states that wheeled recreational devices need to be operated carefully and considerately, give pedestrians the right of way, and not ride at a speed that is hazardous to other footpath users (New Zealand Government, 2004). This rule also directs pedestrians to not unduly obstruct the movement of wheeled recreational devices on the footpath.

[4] The arrival of e-scooter companies in New Zealand prompted the New Zealand Transport Agency to clarify that e-scooters are wheeled recreational devices and not motor vehicles, which meant that e-scooters could legally be ridden on the footpath (Pennington, 2019a).

Figure 1: A separated cycle path on Tuam Street, October 2020 (Source: Author)

Figure 2: An on-road cycle lane on Brougham Street, September 2020 (Source: Author)

The arrival of e-scooter companies in New Zealand has highlighted the inadequacy of the current e-scooter regulations. The lack of speed limits for e-scooters has been labelled as "vague" by the Automobile Association, because the guidance to ride an e-scooter at a speed that is safe for other footpath users is open to interpretation (Keogh, 2018). Several studies have recognised the importance of regulating the speed of e-scooters and other micromobility modes in spaces shared with pedestrians. One study states that e-scooter riders should slow down to approximately 10km per hour in certain areas (Fang, Agrawal, & Hooper, 2019), other studies consider 15km per hour to be an appropriate speed limit (Active Mobility Advisory Panel, 2016; Lieswyn, Fowler, Koorey, Wilke, & Crimp, 2017). Furthermore, it is also recommended that devices should be equipped with a low-speed "footpath mode" or have the ability to be used without motor assistance (Lieswyn et al., 2017). In New Zealand, the need to regulate the speed of e-scooters has been recognised, for example, in Auckland and Wellington, geofencing technology[5] has been used to create low-speed zones where the speed of rented e-scooters will automatically be reduced to 15km per hour (Auckland Council, 2019b; George, 2020). Furthermore, in March 2020, the government sought public feedback on the proposed "Accessible Streets" regulatory package, which aimed to improve the safety and accessibility of streets for active and micromobility modes, by addressing issues with current e-scooter regulations, such as the speed of e-scooters, the transport spaces where e-scooters can be used and how e-scooters are categorised[6]. The public consultations regarding the use of wheeled recreational devices on footpaths and the Accessible Streets package took place almost two decades apart, and were shaped by different trends in transport practices, however, concerns about wheeled recreational devices and pedestrians sharing space have persisted.

E-scooters on footpaths

Whilst e-scooters are permitted to be used in various transport spaces, they encounter challenges in spaces shared with other transport users. Recent research has suggested that there is a disconnection between where e-scooters are used and where is perceived as a suitable environment for them. Fitt and Curl's (2019) survey of the use of, and attitudes towards, e-scooters in four New Zealand cities found that 59% of e-scooter users who had ridden on a

[5] Geofencing involves the use of GPS technology to create virtual geographic boundaries, and is used to delineate the boundaries of cities, and to create no ride or low-speed zones (Miller, 2018). In Christchurch, geofencing technology is used to create no ride and no parking zones, including at the Botanic Gardens and the Christchurch Hospital, however, currently this technology is not used to control the speed of e-scooters.

[6] The Accessible Streets package will also be informed by the various shared e-scooter trial periods that have taken place in New Zealand towns and cities (New Zealand Transport Agency, 2019b).

footpath, and 26% of non-users, agreed that the footpath is appropriate for e-scooter use. This survey also found that 90% of e-scooter users had used the footpath for at least a part of their journey, despite the perception that the footpath was not an ideal environment for the use of e-scooters (Fitt & Curl, 2019). An observational study carried out in Portland, Oregon, where riding an e-scooter on the footpath is illegal, highlighted e-scooter riders' preference to avoid riding on the road (Portland Bureau of Transportation, 2019). This study identified that streets that had higher on-road speed limits were associated with a greater proportion of e-scooter riders riding on the footpath (Portland Bureau of Transportation, 2019). Furthermore, recent research identified that e-scooter riders generally ride at faster speeds on roads, and at slower speeds in spaces shared with pedestrians (Arellano & Fang, 2019). The differential riding speeds in transport spaces could shape e-scooter riders' experiences of those spaces and their decisions of where to ride. Although the findings of these studies suggest that e-scooter riders ride on footpaths because the alternatives, such as riding on the road, are perceived as more dangerous, there is little other research that has investigated how e-scooter riders experience different transport spaces, and how pedestrians experience their presence.

Figure 3: A footpath on Gloucester Street, September 2020 (Source: Author)

Disability and walking advocacy groups contest the use of e-scooters on footpaths, because of the potential for e-scooters to disrupt the safety and comfort of pedestrians. The organisation Living Streets Aotearoa voices the concerns of older adults, young children and people with disabilities and impairments, and believes that footpaths should be for the safe passage of pedestrians (Figure 3) (Living Streets Aotearoa, 2019a). Similarly, Blind Low Vision NZ (formerly the Blind Foundation) have expressed concerns about pedestrians sharing space with e-scooters; they carried out a survey of blind and low vision participants and found that 88% of 210 respondents agreed that e-scooters should be used on the road or cycle ways to prioritise the safety of pedestrians on footpaths, while 2% did not agree and 10% agreed to some extent (Blind Low Vision NZ, 2019). Furthermore, a news article reported that some members of Blind Low Vision NZ contemplated whether to make certain trips because the use of e-scooters on the footpath causes unease (Te, 2019). These groups are concerned about the narrow width of footpaths and the discrepancy in speed between e-scooter riders and pedestrians; some rentable e-scooters travel up to 27 kilometres per hour while the average speed of a pedestrian is around 5km per hour (Larson, 2018; Lieswyn et al., 2017). These groups have called for e-scooters to be banned from footpaths because of the challenges faced by pedestrians, especially those who are less mobile and are more vulnerable to injury.

In New Zealand, rather than banning e-scooter riders from footpaths, regulatory and non-regulatory approaches have been utilised to encourage harmonious relations between e-scooter riders and pedestrians. Having a code of conduct is one approach to minimise conflict between transport users in shared transport spaces, and research has identified that transport users often prefer encouraging considerate behaviour to having an over-regulated environment (Delaney, Parkhurst, & Melia, 2017), and to regulating where different modes can be used (Active Mobility Advisory Panel, 2016). In the context of e-scooter riders and pedestrians sharing space, several studies have provided guidance on what a code of conduct should include; e-scooter riders should give way to pedestrians, keep a safe distance and slow down when approaching pedestrians (Active Mobility Advisory Panel, 2016; Fang et al., 2019; Litman & Blair, 2017). Some of these recommendations have been echoed in a recent educational campaign from the New Zealand Transport Agency (NZTA) called “e-scoot friendly.” This campaign was introduced in Christchurch and other urban centres, and has come in the form of social media advertisements, YouTube videos, posters, neck tags on e-scooters, bus stop advertisements (Figure 4) and footpath decals (Figure 10). The extent of this advertising material highlights that e-scooter riders and pedestrians sharing space is a significant issue.

The imagery used in this campaign, such as in Figure 4, draws attention to the vulnerability of pedestrians and the need for e-scooter riders to be mindful of pedestrians. Educational campaigns are a strategy to communicate the intent of regulations and encourage compliance with them (Active Mobility Advisory Panel, 2016); and unlike regulating the speed and spaces where e-scooters can be used, educational campaigns do not restrict transport or recreational practices (Lieswyn et al., 2017). The "e-scoot friendly" campaign communicates the intent of Road User Rule 11.1, however, this is problematic because these regulations are considered unclear by stakeholder groups and the use of e-scooters on the footpath is contested, as outlined above. These issues highlight the challenges of creating "friendly" relations between transport users whilst also facilitating convenient transport options.

Figure 4: An "e-scoot friendly" bus shelter advertisement on Lyttelton Street, July 2019. (Source: Author)

The relatively recent arrival of e-scooters in pedestrian spaces has engendered a debate about redefining transport spaces to accommodate micromobility modes. As previously outlined, the current e-scooter regulations restrict e-scooter riders from using cycle lanes that are painted onto the road, because these are special vehicle lanes for the sole use of cyclists, but permit e-scooter riders to use cycle paths that are separated from the road, or that are part of the footpath (New Zealand Transport Agency, 2019a). In contrast to New Zealand's regulations, redefining cycle ways to accommodate micromobility modes is a popular approach to regulating e-

scooters, in public discourse and in practice (Cycling in Christchurch, 2018; Fang et al., 2019; Macmillan, 2019; Rose, 2018; J. Walker, 2018). Several sources have suggested separating transport modes into lanes according to their speed and width, with e-scooters travelling in a mid-speed lane located between the road and the footpath (Fitt & Curl, 2019; Rose, 2018; J. Walker, 2018), and a similar approach has been implemented in Singapore as part of the Active Mobility Act (Figure 5). This designation of transport space could minimise potential conflicts with pedestrians, and encourage governments to invest in cycling infrastructure (Cycling in Christchurch, 2018; Gössling, 2020a; Hoek et al., 2019). However, as with e-scooter riders and pedestrians, e-scooter riders' and cyclists' differential experiences of being on the move could mean that categorising them both as "mid-speed" is problematic. There is a need for further research to investigate e-scooter riders' and other transport users' experiences of sharing transport spaces to inform the designation of transport space.

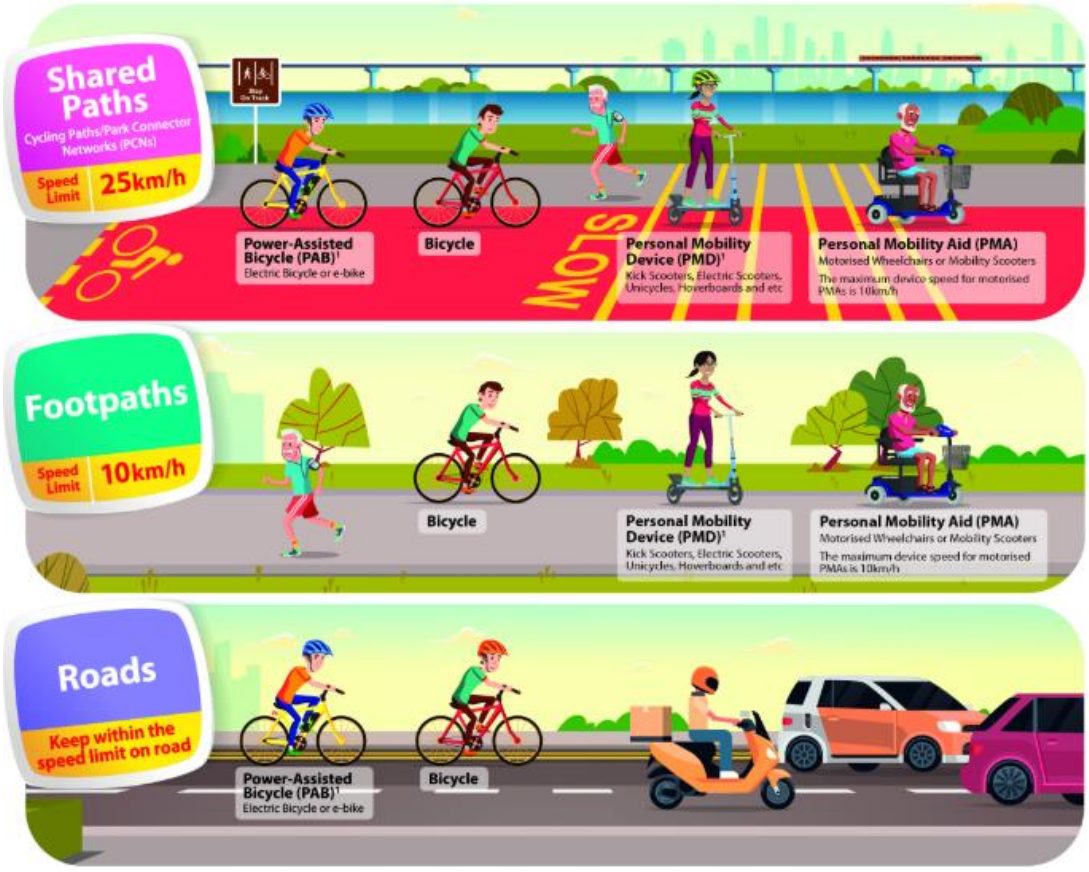

Figure 5: The designation of transport space according to the Active Mobility Act in Singapore (Source: https://www.lta.gov.sg/content/ltaweb/en/walk-cycle-ride/rules-and-code-of-conduct.html.)

Conclusion

With the emergent popularity of new forms of transport, it is necessary to consider their potential to contribute to a sustainable transport system; one that meets mobility needs without compromising public health or ecosystems (Lavallée, 2004). The health, environmental and equity impacts associated with the uptake of e-scooters are unclear. Furthermore, establishing the role of e-scooters in transitioning towards healthy, sustainable and equitable transport systems becomes more complex when taking into consideration how e-scooter riders and pedestrians experience sharing space. Anecdotal evidence suggests that pedestrians feel disadvantaged by e-scooters because of where and how they are ridden, and exploring the issues associated with regulatory and non-regulatory approaches to managing e-scooters highlights the challenges experienced by e-scooter riders and pedestrians sharing space. Governments making decisions about how to regulate e-scooters need to consider what the uptake of e-scooters, and their use in pedestrian spaces, means for transforming transport systems. There is a need to further explore the everyday experiences of e-scooter riders and pedestrians sharing space to inform regulations and the designation of transport space for the use of e-scooters and other micromobility modes. The following chapter explores issues associated with different transport users sharing space and the ways they negotiate encounters.

Chapter 2: E-scooter riders, pedestrians and travel practices

The growing popularity of e-scooters raises concerns about the appropriateness of their co-existence with pedestrians in shared transport spaces. Although there are reports that pedestrians feel burdened by sharing space with e-scooter riders because of the fast pace of e-scooters and lack of space on footpaths, there is a need to further research to gain an in-depth understanding of e-scooter riders' and pedestrians' experiences of sharing space. Pedestrians and e-scooter riders sharing space is a relatively new experience, however, creating transport spaces which are shared by different transport users is popular in policy and practice (Moody & Melia, 2014). The mixing of different transport users can be contentious because of the competing meanings and uses of spaces, and because transport users are required to negotiate encounters and coordinate their movements with others (Jensen, 2010). Jensen (2013) conceptualises mobilities as "staged from above" through urban planning and design, and "staged from below" through social interactions. This conceptualisation of how mobilities are "staged" is useful for exploring the experiences and meanings of e-scooter riders and pedestrians sharing transport space.

This chapter begins by outlining the importance of understanding e-scooter riders' and pedestrians' travel practices and discussing the ways that travel practices can be explored and understood. The next section provides insight into how transport spaces are "staged from above" and how transport spaces are experienced by different transport users. The following section discusses the ways that mobilities are "staged from below" through encounters between transport users. Finally, this chapter outlines some of the issues associated with pedestrians and e-scooter riders sharing space and the need for further research.

Understanding travel practices

Traditionally, transport studies have conceptualised transport as the movement between destinations, and travel behaviour models have theorised individuals as rational actors who seek to reduce the costs of travelling (Adey, 2009). However, conceptualising travel experiences as rationalised behaviours overlooks the complexity of meanings associated with being on the move (Spinney, 2009). Acknowledging that transport is more than physical movement, because it takes place within social contexts, is useful for understanding e-scooter riders' and pedestrians' experiences of sharing space, and is important for encouraging the uptake of healthy and sustainable travel practices. As discussed in the previous chapter, the availability of e-scooters could alter travel practices in various ways, for example, e-scooters

could be used in conjunction with public transport as a solution to the "last mile" problem, and encourage societal shifts towards less car-dependent travel practices. Furthermore, e-scooter riding could impact the practice of walking by replacing trips taken by foot, encouraging more walking as part of a multi-modal journey, and disrupting pedestrians' experiences of footpaths. The broad field of mobilities research provides useful theories and concepts for investigating e-scooter riders' and pedestrians' travel practices and the social contexts that shape their experiences.

The "mobilities turn" in social science research recognises the centrality of movement to everyday life, from the bodily to the global scale, and the complex social dimensions of movement. Social practice theory provides a framework which is useful for investigating the social practices around mobilities (Sheller & Urry, 2016), and is concerned with the (re)configurations of elements that shape how practices evolve over time, and how individuals are recruited to take part in practices (Shove, Pantzar, & Watson, 2012). Shove and colleagues (2012) contend that social practices are a configuration of three elements: materials (objects and technologies), meanings (symbolic representations and ideas) and competences (knowledge and skills). A social practices approach highlights the need to understand mobilities in relation to non-mobility practices, for example, commuting practices are shaped by the patterns and rhythms of everyday life (Cass & Faulconbridge, 2016), and by major life changes (Guell, Panter, Jones, & Ogilvie, 2012). Fitt and Curl (2020) utilise a social practices approach to outline the evolution of e-scooter riding since the launch of shared e-scooter services in New Zealand, and explore how e-scootering has become embedded into social life. They acknowledge the contestation of e-scooters in different transport spaces and assert that this issue could be addressed with changes to the materials and the meanings of e-scootering, namely the built environment and interpretations of where it is suitable to ride e-scooters (Fitt & Curl, 2020). These studies provide insight into the complex and interconnecting social and material factors that shape the evolution of travel practices.

Mobilities research also recognises the importance of embodied and affective experiences for understanding travel practices. Being on the move is an embodied experience; transport users sensorially experience their environments and use their bodies to coordinate interactions with other transport users (O. B. Jensen, 2013). Various studies have highlighted the body-centred experiences of travel, and offer insights into how and why people move (Middleton, 2010; Spinney, 2009; Van Duppen & Spierings, 2013). Looking beyond individual bodies, affect is a concept that highlights the relations between bodies, technologies and matter (Bissell, 2010).

Affect is described as the "energetic outcomes of encounters between bodies in particular places" (Conradson & Latham, 2007, p. 232), and is a way of conceptualising the interrelationships of body and world as a "set of intensities" (Jones, 2012, p. 645). The concept of "affective atmospheres" is utilised to illustrate the ways that shared transport spaces are experienced, felt and perceived, such as train carriages (Bissell, 2010) and designated shared paths (Simpson, 2017). Jones (2012) argues that individuals have different affective capacities to manage emotional and physical challenges, which shapes their willingness to engage in travel practices, such as urban cycling. Several studies emphasise the importance of exploring affective and embodied experiences to understand travel practices, and are critical of sustainable transport agendas that overlook these experiences of active transport (Cupples & Ridley, 2008; Doughty & Murray, 2016; Jones, 2005). Investigating the embodied and affective dimensions of e-scooter riding and walking, and how these are impacted by the experience of sharing transport space, is important for understanding travel practices and informing transport planning.

Designing spaces

Exploring the ways that transport spaces are "staged from above" through urban planning and design provides insight into how mobilities and mobile subjects are understood by planners and policymakers. Urban planning approaches have conceptualised pedestrians and their experiences of walking in different ways. For example, the New Urbanist movement, which emerged as a response to car dominance and suburban sprawl in the 1980s, recognises the role of the built environment in encouraging the uptake of walking, and the importance of designing cities for people (Gehl, Kaefer, & Reigstad, 2006; Middleton, 2018). This movement also acknowledges the social function of the built environment; Jacobs (1961, p. 29) describes footpaths as a city's "most vital organs" because they facilitate social interaction, community cohesion and public trust. In comparison with this understanding of public spaces as sites of social encounters, pedestrianism is an approach that recognises footpaths as sites of circulation (Blomley, 2013). Pedestrianism, which has been adopted by North American municipalities, conceptualises pedestrians as vehicular units and, through engineering and regulation, prioritises pedestrians' unobstructed flow (Blomley, 2013). However, this conceptualisation of footpaths as functional transport spaces restricts other social, political and economic activities from taking place in these spaces (Loukaitou-Sideris & Ehrenfeucht, 2009). It has been argued that urban planning should balance the stationary and mobile functions of city streets (von Schönfeld & Bertolini, 2017), to address the contestation between envisioning public spaces

as “movement spaces” and “social spaces” (O. B. Jensen, 2013). However, researchers have challenged the notion that the built environment determines walking behaviours because pedestrians’ relationships to the built environment are complex (Chan, Li, Schwanen, & Banister, 2020), and highlight the need to explore pedestrians’ heterogeneous needs and experiences (Middleton, 2018).

Walking is often regarded as a self-evident activity and described as quotidian, mundane and routinized (Bean et al., 2008; Middleton, 2010, 2011a). However, this “everydayness” of walking obscures the multifaceted experiences of travelling by foot (Wunderlich, 2008). Walking is an embodied experience; the body is the driving force of this type of mobility and the bodily senses mediate engagements with the environment (O. B. Jensen, 2013). Wunderlich (2008) discusses different styles of walking, each with their own rhythm and pace, and how they are productive of sensorial engagements and experiences of place. While walking is a way to engage with the external environment, it is also recognised as a way to engage with what is going on internally, and is associated with the accomplishment of activities, including thinking and working (Middleton, 2009; Solnit, 2001). Walking is often idealised as a mode of transport because of its experiential, exploratory and social dimensions, however, Green (2009) warns against making assumptions about the universal benefits of walking. For pedestrians who do not have access to other modes of transport, travelling by foot may be a manifestation of their social exclusion (Bostock, 2001). Furthermore, encountering others while walking can be an unwelcome or confrontational experience, because of the social and spatial negotiations involved (Middleton, 2018). It is important to understand pedestrians’ diverse experiences of walking, and their experiences of encountering other transport users, to inform how transport spaces are “staged from above.”

While transport users sharing space can be problematic, it is a common occurrence in different transport spaces. There are various studies that have investigated transport users’ experiences of shared transport spaces, including research on low-speed shared vehicle zones (Hamilton-Baillie, 2008; Karndacharuk, Wilson, & Dunn, 2016), designated shared paths (Hatfield & Prabhakharan, 2016) and sharing space on footpaths (Kang & Fricker, 2016; Nikiforiadis & Basbas, 2019). Shared space is an approach to street design which encourages the mixing of cars, bicycles and pedestrians by minimising the physical separation between different modes of transport (Figure 6) (Hamilton-Baillie, 2008). The principles of shared space correspond to the New Urbanist movement; designated shared spaces are lauded for creating convivial spaces and encouraging a shift towards active transport (Middleton, 2018). Proponents of shared space

posit that no mode of transport is prioritised over another, and that the removal of signage, demarcation and regulations encourages transport users to engage in interactions (Hamilton-Baillie, 2008). However, some researchers are critical of designated shared spaces because of the in-built assumption that all transport users are equally positioned to participate in shared spaces (Imrie, 2012; Moody & Melia, 2014). For example, Imrie (2012) describes designated shared spaces as "auto-disabling environments" because the design of these spaces prioritises the movement of transport users who interact with and are responsive to cars, and fails to account for transport users who have reduced abilities to negotiate shared spaces, such as those with a visual impairment or disability. This critique of shared space highlights the challenges of diverse transport users sharing space.

Figure 6: A designated shared space used by a diversity of transports users and modes, including cars, cyclists, pedestrians, e-scooter riders and the tram. Oxford Terrace, September 2020 (Source: Author)

Both quantitative and qualitative research are useful for exploring the visible and non-visible aspects of transport users' experiences of shared transport spaces. Cyclists and pedestrians share space on designated shared paths, which are often constructed in cities with limited transport space as a way to keep cyclists separate from motorised traffic (Figure 7) (Hatfield &

Prabhakharan, 2016). Quantitative studies, such as those involving field-observers or video analysis, have observed interactions between pedestrians and cyclists, including collisions between cyclists and pedestrians (Haworth, Schramm, & Debnath, 2014), non-compliance with the path's segregation of transport modes (Zheng, Sayed, & Guo, 2020) and how cyclists adjust their speed in shared transport spaces (Boufous, Hatfield, & Grzebieta, 2018; Kiyota, Vandebona, Katafuchi, & Inoue, 2000). These quantitative studies have investigated cyclists' and pedestrians' interactions and reactions, whereas qualitative research explores perceptions and experiences (Brown, 2012; Delaney, 2016). For example, interviews with cyclists and pedestrians identified their differing perceptions of how each should behave, and the appropriateness of segregated lanes on designated shared paths (Delaney et al., 2017). Simpson (2017) investigated cyclists' experiences of using designated shared paths, and highlighted how they felt frustration towards the slow-pace of pedestrians and the negative reactions they received from pedestrians on designated shared paths. These studies illustrate the challenges of creating transport spaces that meet the needs of all users, because transport users have various experiences and expectations of navigating shared transport spaces, which is explored further below.

Figure 7: A designated shared path on Rolleston Avenue, September 2020 (Source: Author)

Negotiating encounters

Encounters between transport users are "staged from below" as they draw on various techniques and tactics to negotiate encounters with each other (O. B. Jensen, 2013). Many studies have discussed how subjects engaging in different forms of mobility interact, including runners and pedestrians (Cook, Shaw, & Simpson, 2016a), cyclists and pedestrians (Brown, 2012; Delaney, 2016; Simpson, 2017), snowboarders and skiers (Edensor & Richards, 2007) and groups of cyclists and car drivers (Aldred & Jungnickel, 2012); and have categorised different types of encounters between transport users (Cook et al., 2016a; Jensen, 2010). Jensen (2010) observed and differentiated the types of encounters between fellow pedestrians and between pedestrians and cyclists in a public square in Copenhagen, offering insights into the spatial organisation and micro-movements of encounters. The negotiation of encounters requires the giving and receiving of information, such as through body language and facial expressions. Cook and colleagues (2016a) outline how runners communicate their intentions through bodily movements to coordinate with and pass pedestrians. In a study of mountain bikers' and pedestrians' experiences of sharing paths, Brown (2012) emphasises the importance of being attuned to other path users; she referred to the roles of sensory, bodily and affective attunement in pre-empting and responding to encounters. However, several studies have documented the challenges of coordinating encounters because of the ambiguity of how to interact (Delaney et al., 2017; Simpson, 2017). For example, transport users feel uncertain of who should be responsible for interactions (Brown, 2012), and perceptions of who should take responsibility for negotiating encounters are often "staged from above," as they are shaped by the transport spaces that encounters take place within (Cook et al., 2016a; Tuncer et al., 2020). This research on how encounters are negotiated illustrates the complex information-processing and decision-making of being on the move as transport users interpret the movements of others and the built environment (Jensen, 2010).

Encounters between transport users provide insight into the ways that rights to space are perceived and experienced (Cook et al., 2016a). Through the techniques and tactics mentioned above, transport users make claims to space, which occur in the context of informal rules and codes. The informal rules and codes that govern shared transport spaces are described as an "implicit contract" and are important for building trust between strangers (Goffman, 1972). For example, Jonasson (2004) conducted an ethnographic study in a public square shared by car drivers, pedestrians and cyclists and described informal rules. He discusses the rule of "continuity," referring to the shared expectation of continual movement, and emphasises the

inappropriateness of interrupting this expectation (Jonasson, 2004). Such informal norms and codes are made visible when they are transgressed and tensions arise between transport users (Middleton, 2018). The binary of "good" and "bad" has been used to describe transport users and their adherence to informal norms and codes; Middleton (2018) discusses the skills of being a "good pedestrian," and Aldred (2013) differentiates "good" and "bad" cyclists according to their display of competencies. While distinguishing good and bad transport users is simplistic, it highlights how transport identities are constructed, how claims to space are (de)legitimised and a mobile order is produced (Cook, Shaw, & Simpson, 2016b; Jensen, 2006). However, it has been argued that mobile order is not fixed; it is continually being negotiated, contested and ignored as transport users respond to encounters in numerous and creative ways (Jonasson, 2004). E-scooters are a relatively novel mode of transport so it is unclear what their presence means for the mobile order in transport spaces shared with pedestrians.

Scholars often draw on "dramaturgic metaphors," in reference to theatre and dance, to conceptualise mobilities and social encounters (O. B. Jensen, 2013). The work of sociologist Erving Goffman is relevant to the investigation of contemporary mobilities; his work provides concepts and terms that are useful for understanding how encounters are coordinated and order is produced (Jensen, 2006). Goffman (1972) likens public encounters to performances because individuals attempt to sustain a "viable image" of themselves through their actions. Here, performance refers to the ways that individuals engage in "impression management" as they are aware of the role they are expected to play and how they will be received by an audience (Goffman, 1956) Micro-movements are considered performative because the body performs, and creates identities and relations while on the move (O. B. Jensen, 2013), and because they tell us something about society and culture (Jonasson, 2004). In contrast to the idea that individuals attempt to control how they are perceived, the human geographer David Seamon's work describes bodily movements as unpremeditated (Seamon, 1980). Seamon argues that experience is apprehended through the body, and that the body is able to direct action pre-cognitively rather than reacting to cognitive stimulation (Adey, 2009). He outlines how the micro-movements of the body are scaled up, or fused together, to form practices which facilitate everyday tasks and routines (Seamon, 1980). Furthermore, Seamon (1980) describes how bodies come together in space and time to form a "place-ballet," which refers to the way that diverse people and practices synchronise to make up a choreographed whole. The concept of the "ballet" has been used elsewhere to describe the coming together of people, for example,

Jacobs (1961) describes the complexity of social interactions on the pavement as the "sidewalk ballet." However, Jensen (2010) contests the idea that the ballet is "one happy performance" and highlights the power dynamics implicit in achieving synchronicity. Exploring these dramaturgic metaphors highlights the tensions between understanding performances as intentional and as unpremeditated, and how encounters between e-scooter riders and pedestrians could be "staged from below."

E-scooter riders and pedestrians sharing space

Emerging evidence suggests that e-scooter riders' use of the footpath creates unsafe conditions for pedestrians, however, little research has investigated e-scooter riders' and pedestrians' experiences of sharing space. As discussed in the previous chapter, few studies have examined pedestrians' e-scooter-related injuries and their actual safety, however, pedestrians' perceived safety is also important for understanding how they experience the co-presence of e-scooters. James and colleagues (2019) conducted a survey that investigated e-scooter riders' and pedestrians' perceptions of safety. They found that e-scooter riders and pedestrians felt less safe around dockless e-scooter riders compared to riders of other modes of transport, including shared bicycles and privately owned bicycles, and that more pedestrians reported feeling unsafe compared to people who had ridden e-scooters (James et al., 2019). This study suggests that tensions could arise between e-scooter riders and pedestrians because of the perception that e-scooter riding is unsafe. Furthermore, recent research has provided some insights into the issues of e-scooter riders and pedestrians sharing space, such as obstructive e-scooter parking practices (Fang et al., 2018) and unclear e-scooter regulations (Gössling, 2020a; James et al., 2019; Tuncer et al., 2020). Some studies have also observed the ways that encounters between e-scooter riders and pedestrians are played out. An ethnomethodological study used video recordings to investigate how e-scooter riders in Paris moved through different transport spaces, and found that e-scooter riders interpreted the rights and responsibilities of these spaces and adjusted their practices in accordance, such as dismounting their e-scooter in spaces shared with pedestrians (Tuncer et al., 2020). A similar study in Wellington used video methods to capture e-scooter riders' experiences of navigating the urban environment and highlights e-scooter riders' desire for unobstructed movement, and how pedestrians generally gave way to e-scooter riders (Hunter & Lloyd, 2020). While these studies have investigated encounters between e-scooter riders and pedestrians from the perspective of e-scooter riders, very little research has examined pedestrians' experiences of encountering e-scooter riders.

Emerging issues and the need for empirical research

The novelty of e-scooters means that there is a need to investigate how e-scooter riders experience transport spaces and how encounters between e-scooter riders and pedestrians are played out and perceived. Drawing on existing research, this chapter has discussed how transport spaces are "staged from above" through urban planning and design and how encounters between transport users are "staged from below." This research offers insights into the issues of different transport users sharing space, such as the vulnerability of some transport users, their diverse expectations and contested rights to space, which are useful for exploring e-scooter riders' and pedestrians' experiences of sharing space. The emerging research on how e-scooter riders use transport spaces and interact with others generally has not included the perspectives of pedestrians. Research investigating experiences of shared transport spaces can benefit from the inclusion of different transport users' voices, rather than focusing on one group (Cook et al., 2016a). The present study attempts to address this gap in the literature by exploring both e-scooter riders' and pedestrians' experiences of sharing space and what these experiences mean for travel practices. As discussed in the following chapter, qualitative methods are an appropriate way to explore this issue and gain in-depth understandings of pedestrians' and e-scooter riders' experiences, the diverse meanings associated with movement and the complexities of negotiating encounters.

This study aimed to address the following question:

- How do e-scooter riders and pedestrians experience sharing space?

Chapter 3: Methodology and methods

The use of e-scooters on footpaths is a relatively new experience, therefore the purpose of this study was to explore how e-scooter riders and pedestrians experience sharing transport space. Qualitative methods were drawn on to understand the uniqueness and complexity of e-scooter riders' and pedestrians' experiences, and to investigate underlying norms, attitudes and perceptions that shape their travel practices (Cass & Faulconbridge, 2016). In-depth interviews were carried out to provide a breadth and depth of information about e-scooter riders' and pedestrians' experiences. This study has also been informed by the "mobilities turn" in social science research. In line with mobilities thinking, I have explored the entanglement of movement with shared meanings and experiences, and the everyday urban politics of sharing space (Cresswell, 2010; Middleton, 2018).

This chapter begins with an overview of the epistemological approach of this research project. In the next section, I provide a reflexive account of how my background and subjective experiences may have influenced the research process and interpretation of the findings. Following this, I describe the methods that I have used and the limitations of the study design. I also provide a brief overview of the types of walking and e-scooter riding trips that participants engaged in and the transport spaces that they used. In the final section, the three themes that are discussed in the following three chapters are outlined.

Constructionism

This research project is underpinned by the epistemological approach of constructionism. Transport is an everyday experience which is embedded in complex social worlds (Guell et al., 2012), so I drew on constructionism to gain a deeper understanding of how individuals develop subjective meanings about their transport experiences. From a constructionist perspective, all knowledge is constructed via our engagement with human beings and the world (Creswell, 2014). Crotty (1998) states that in constructionism objectivity and subjectivity are brought together. In this view, experiences are formulated of the objective realm of the external world interacting with subjective realities, and through this interaction meaning is constructed (Crotty, 1998). In this study, I was interested in the physical movements of pedestrians and e-scooter riders in shared transport spaces, and the subjective representations and interpretations of these experiences. Understanding the ways that social, political and historical processes shaped representations and interpretations was also fundamental to this research (Green & Thorogood, 2004).

In contrast to positivist reasoning, constructionism acknowledges that there is no one truth to be discovered. Rather, a constructionist approach recognises that there are multiple truths or "knowledges" (Braun & Clarke, 2013). We construct knowledge about the world through social interactions, which is communicated through language (Green & Thorogood, 2004). I was interested in the talk that e-scooter riders and pedestrians associated with their embodied experiences, and how language and discourse were used to interpret and represent reality. Tracy (2013) likens human activity to a "text" that can be read, deconstructed and reconstructed; engaging in conversation with pedestrians and e-scooter riders allowed for the reading, interpretation and analysis of their activity. Drawing on a constructionist approach, I recognise that the findings of this research are my interpretation of constructed meanings, which emerged from my interactions with the participants and the data generated. I have aimed to reflect on and document how my role as the researcher has influenced the research design and findings.

Reflexivity

In qualitative research underpinned by the constructionist paradigm, the researcher is integral to the research process because the collection and analysis of data is influenced by the researcher's background and lived experiences (Liamputtong, 2009). Therefore, reflexivity is essential. This means researchers make their personal perspectives and experiences explicit, and acknowledge the role that these play in the interpretive process (Creswell, 2014). Throughout the research process, I have become aware of how my own experiences and preconceptions have shaped the research project. I have an interest in active and sustainable transport, therefore I was intrigued by the sudden arrival of e-scooters. My interest in transitioning towards low-carbon transport, and achieving environmental and health goals, has informed my framing of the research topic. While I have approached this research project from the perspective of these overarching environmental and health goals, the research process has broadened my understanding of travel practices and how they are shaped by micro-level interactions.

I am neither a commuting pedestrian nor a regular e-scooter user, however, engaging with the existing literature and conducting interviews has provided me with a set of ideas and concepts that are useful for understanding how e-scooter riders and pedestrians interact. These understandings have made me aware of adjusting my own behaviour to accommodate others when I am using shared transport spaces and observing interactions between path users. Interestingly, observing how different transport users interacted during the initial COVID-19

lockdown period provided insight into how encounters are played out. During this time, I witnessed pedestrians, runners and cyclists negotiate encounters as they strived to maintain physical distance from one another, such as by using body language to communicate or moving into a different transport space to avoid contact. These observations correspond to the ways that participants in this study talked about negotiating encounters and the significance of personal space. My own experiences and observations have been useful for analysing data; they have been instrumental in visualising how encounters occur and interpreting the participants' experiences. Prior to beginning this project, I had limited research experience therefore conducting a research project and encountering challenges, such as with the recruitment of participants, interviewing participants and data analysis, has been a learning experience.

Methods

Ethical considerations

The specific ethical issues relevant to this study were obtaining informed consent, the power relations inherent in the interviewing process and protecting the anonymity of the participants. People under the age of eighteen were excluded from the study because of the ethical concerns of obtaining informed consent from minors. I provided participants with an information sheet and consent form prior to the interview and again at the interview (Appendices A and B). These documents outlined the purpose of the study, the type of data that would be collected, and how the data would be used and securely stored. At the beginning of each interview, I read through the consent form with the participant to make sure that they understood the information before they signed the form. I was aware of the potential for interviewees to experience a power imbalance between themselves and the interviewer (Green & Thorogood, 2004). Most of the interviews took place in a meeting room at the Department of Population Health, and it is possible that interviewees could have perceived this as a formal and unfamiliar setting and felt uncomfortable being interviewed there. I attempted to address some of these issues by offering participants the opportunity to choose the location of the interview, and by keeping the interviews conversational to provide an environment in which people felt comfortable to share their views. Steps were also taken to conceal the identities of the participants. Each participant was given the opportunity to choose a pseudonym for themselves, and these pseudonyms are referred to in the following chapters when using direct quotes from the interviews. Although I felt it was important to quote the participants in their own words, I considered whether

participants could potentially be identified from the direct quotes. If this was the case, I modified the wording slightly to protect their confidentiality, such as by removing names of places.

An application for low-risk ethical approval was submitted to the Department of Population Health, and then audited by the University of Otago Human Ethics Committee. Subsequently, ethical approval was granted and was given the reference number: D19/277. The Māori Research Advisor at the Christchurch campus of the University of Otago was also consulted prior to the study commencing, and they provided guidance on the recruitment of participants, Māori health resources and the dissemination of results.

Recruitment

Purposive and convenience sampling were used to recruit participants who had experienced sharing space on footpaths as an e-scooter rider, a pedestrian or both. Posters seeking participants for the study were displayed on Canterbury Medical Library noticeboards and on other noticeboards in Christchurch Hospital. A flyer for the study was posted on the Healthy Christchurch website and it was included in their newsletter, which was distributed electronically to a range of community organisations. As a result of the study being advertised online and widely circulated, I received interest from around New Zealand. However, because it was a small-scale qualitative project involving face-to-face interviews, people from outside of Christchurch were not included. This caused some upset among people who were interested in having their voices heard, and highlighted how the presence of e-scooters in pedestrian spaces is a significant and contentious issue. Before participants were recruited to the study, I communicated with them about what the data collection would involve, and discussed their experiences of e-scooter riding or sharing space with e-scooters.

Twelve participants were recruited to take part in this study. Nine of these participants were female and three were male. The age range of participants was from 22 to 71 years old. Ten participants identified as New Zealand European and three participants recorded their ethnicity as "Other." The participants' ethnicities sum to more than twelve because one participant identified with more than one ethnicity. I recruited six participants who had experienced riding an e-scooter and six participants who had experienced sharing space with e-scooters. People are described as "multi-mobile subjects" because generally we engage in multiple modes of transport (Cook et al., 2016a), so participants were invited to speak about their experiences of

both e-scooter riding and walking. Four of the participants were also regular cyclists and they talked about their experiences of sharing transport space as a cyclist. One of the participants owned their e-scooter. In the following chapters, quotations from interview transcripts are identified with the pseudonym of the participant and as either an "e-scooter rider" or "pedestrian" according to which mode of transport they were primarily recruited to talk about.

I was interested in generating knowledge about e-scooter riders' and pedestrians' personal experiences of sharing transport space in Christchurch, rather than aiming for generalisability of the research findings. In qualitative research, a small sample size is suitable for examining the meanings that people give to their experiences (Liamputtong, 2009). The sample size of twelve participants was dictated by the time constraints of a Master's research project, however, this is considered to be a suitable number of interviews for a small research project (Braun and Clarke, 2013). When using qualitative methods, sample size is often determined by the concept of data saturation, which is when there is few or no new data being generated in subsequent interviews (Liamputtong, 2009). While I felt that there was still new and interesting information being generated by the last interview, there were similar themes emerging from the interviews.

Study limitations

There are some limitations with the recruitment process of this study. I attempted to screen potential participants, however, this process of screening could be improved. Self-selection is a limitation associated with the purposive and convenience sampling because participants choose to take part in the research. When individuals expressed interest in taking part in the study, I asked them about their experiences of sharing space as an e-scooter rider or as a pedestrian in order to recruit information-rich participants. However, one of the participants recruited to take part in an interview spoke about the issue of pedestrians and e-scooter riders sharing space in general terms rather than talking about their personal experiences. Often the screening of participants took place over email, which may be considered a more convenient form of communication for some, however, talking over the phone may have elicited more information about the participants' experiences. Recognising Māori as tangata whenua of New Zealand, and the importance of addressing Māori health disparities, I planned to recruit Māori to take part in this study. Unfortunately I did not manage to recruit any Māori participants, therefore screening participants for their ethnicity could have been useful to make sure that Māori were included in this study.

Data collection

In-depth interviews were conducted to explore the participants' experiences of sharing transport space. The interviews took place in October and November 2019. Most of the interviews were conducted at the Department of Population Health, two of the interviews took place in the participants' workplaces and one took place in a participant's home. All of the interviews were conducted individually and face-to-face, and were digitally recorded. The interviews ranged in length from 25 minutes to one hour. Interviewing is a suitable method for collecting data from people who have first-hand perspectives of a phenomenon, generating rich descriptions of their experiences and capturing the issues that are important to them in their own words (Braun & Clarke, 2013). Interviewing participants was a meaning-making process; by asking questions and the participants providing answers, knowledge about their reality was constructed (Liamputtong, 2009).

The interviews were semi-structured. I used an interview guide, which was a broad outline of topics of interest, to aid discussion and to make sure that important topics were covered. The topics in the interview guide included everyday transport choices, experiences of e-scooter riding and walking, experiences and expectations of sharing transport space, and changing travel practices. Although I was excited about conducting the interviews and hearing about people's transport experiences, I was also nervous. Therefore, having an interview guide and images from the NZTA's "e-scoot friendly" campaign, such as Figure 4, as prompts was useful. I had researched in-depth interviewing methods to make sure that I was familiar with the various tasks I needed to perform during the interview, such as active listening, appropriate body language and asking probing questions (Braun & Clarke, 2013; Green & Thorogood, 2004). I attempted to build rapport with the participants prior to the interview to make them feel comfortable and before each interview took place, I outlined the topics that were likely to be covered in the interview to give some certainty to the participants of what the interview would involve.

To begin with, I asked the participants general questions to stimulate discussion, such as the mode of transport they used to get the interview. I asked open-ended questions so that participants had the opportunity to lead the discussion and bring up topics that were important to them that I may not have anticipated (Braun & Clarke, 2013). When an issue was raised that was relevant or interesting, I asked follow up questions to gain a deeper understanding of the

topic. This meant that the order of topics jumped around, and that I needed to be prepared to adapt the interview guide and how I phrased questions in accordance with the content of the interview. When I felt that the topic areas from the interview guide had been sufficiently covered, I closed the interview by asking participants if they had anything else they would like to add, and in some cases this resulted in further discussion.

Following the interview, data on ethnicity, age and gender were collected from the participants. I explained to the participants that this information is collected for monitoring purposes and that providing it was optional. They were given a form with a short set of questions to complete themselves. This included the 2013 New Zealand Census ethnicity question, in accordance with the Ministry of Health Guidelines (Appendix C). At the conclusion of the interviews, I thanked the participants for their time and gave them a gift voucher as a token of appreciation.

Data transcription

The digital recordings of the interviews were transcribed into written text. I completed the transcribing myself, which meant that I became more familiar with the data in the transcribing process, and participants' personal information disclosed in the interviews remained confidential. Transcription occurred as soon as possible after an interview took place, meaning that the interview was still fresh in my memory, assisting with filling in any inaudible words or sentences from the interviews (Braun & Clarke, 2013). The audio recordings were transcribed verbatim, keeping the informal style of the conversation and non-verbal sounds, which assisted me to make sense of the data and aid with the analysis (Liamputtong, 2009). After listening to and transcribing each interview, I reviewed the transcript and how the interview played out and decided whether I needed to adjust the interview topics or the style of questioning to improve the flow of the interview. Additionally, if any unanticipated topics arose during the interviews that I considered to be important, I included these in the interview guide for subsequent interviews. Transcription of the interviews was also the initial stage of analysis before the systematic analysis, because I started to make notes on analytic ideas that emerged from the data (Braun & Clarke, 2013).

Following the transcription of each interview, member checking was carried out. Participants were given the opportunity to check the accuracy of their interview transcript, delete information or provide further detail (Liamputtong, 2009). I emailed the interviewees thanking them for their participation and attached a copy of the transcript, and they were given a period

of two weeks to make any changes to the transcript. If participants did not respond to the email, I assumed that they were happy with the transcript and did not wish to amend it. Most participants did not want to make any changes to their interview transcript and a few participants made minor changes. After reading the interview transcript, if I felt there were important topics that I did not cover in the interviews, or areas that I wanted clarification of, I emailed participants with follow up questions.

Data analysis

The method used for making sense of the interview data was thematic analysis. The software package NVivo was used to assist with storing, organising and analysing the dataset. I had not used this software previously, therefore I spent a short time learning how to use it. Thematic analysis is a six stage process to identify themes and patterns of meaning across the dataset, and involved the following steps: familiarising myself with data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and presenting and discussing results (Braun & Clarke, 2006, 2013) The first stage of the thematic analysis involved reading and re-reading the interview transcripts to become familiar with the dataset. During this stage, I identified parts of the data that were relevant to the research question and subsequently these parts of the data that were relevant or interesting were labelled with codes. I used NVivo to group codes into categories according to their relationship to one another and to develop themes. The first and second iteration of themes were revised. The first iteration of themes were broad, overarching ideas so the revision stage involved separating out key subthemes and then reassessing the connections between them. The second iteration of themes also involved rethinking how the subthemes fitted together to make sure the themes told a coherent story and were congruous with the dataset (Braun & Clarke, 2013). Subsequently, three major themes, or patterns of meanings, were finalised, named and defined, which are outlined below.

The analysis of the data highlighted the various ways that the participants engaged in walking and e-scooter riding. The frequency that participants took trips by e-scooter or by foot ranged from an everyday experience to making occasional trips. Participants discussed taking trips by e-scooter when it was convenient, such as when they were running late, travelling into the central city or when they could use a discount code. They also spoke about taking trips by e-scooter or by foot when other modes of transport were not available or were less convenient. Some trips that participants took were made up of wholly e-scooter riding or walking, however,

many of the participants described how their trips were multi-modal. For example, some participants who rented e-scooters talked about part of their trip being made up of walking or driving. Similarly, some pedestrians took the bus as part of their trip. Participants outlined the various purposes of the trips that they made; both e-scooter riders and pedestrians spoke about engaging in recreational and commuting trips. Participants described using e-scooters to travel to and from social events or to run errands around town. The participants also discussed the different transport spaces where they walked, including footpaths, designated shared paths and shared spaces, such as in central Christchurch, and the spaces where they rode e-scooters, including on footpaths, designated shared paths, roads and in cycle ways.

The findings chapters

The following three chapters present a synthesis of the analytic narrative, data extracts and existing literature, and are based on the three major themes that I identified in the data analysis: "negotiation in motion," "rights to space" and "common good." The three themes explore how e-scooter riders and pedestrians made sense of their experiences of sharing space at different scales, from the micro-level to the macro-level. Chapter 4 discusses the micro-level encounters between e-scooter riders and pedestrians, described as a "negotiation in motion." This chapter examines how e-scooter riders' and pedestrians' diverse experiences of movement shape encounters, and how they use informal norms and communication techniques to negotiate interactions. Chapter 5 examines the meanings that participants associated with transport spaces, social groups and items worn or carried by transport users. This discussion of meanings highlights how "rights to space" are claimed and contested. At the macro-level, Chapter 6 explores the issues associated with the business model of shared e-scooter companies and the government's e-scooter regulations. The discussion of these economic and political structures highlights what participants considered to be the "common good," and how different transport users contribute to it.

Chapter 4: Negotiation in motion

The e-scooter riders and pedestrians who took part in this study described the micropolitics of shared transport spaces, and how diverse transport users coordinated their encounters on footpaths, designated shared paths, cycle ways and the road. The term "negotiation in motion" refers to the ongoing decision-making of navigating and manoeuvring in shared transport spaces; being on the move involves the processing of information to become attuned to other transport users and avoid collisions (Jensen, 2010). Those sharing transport spaces make sense of spatial practices, forms of communication, sensory experiences and subjective desires in order to coordinate encounters (Cook et al., 2016b). The concept of "place-ballet" is useful for understanding how the activity in shared transport spaces is choreographed. Place-ballet, as discussed in Chapter 2, refers to the way that individuals carrying out their own activities come together in time and space, and create the pace and liveliness of a place (Seamon, 1980). However, e-scooter riders and pedestrians described the challenges of choreographing encounters because of their different styles of movement. While the participants talked about how they drew on informal norms and communication tactics to make sense of encounters, they also discussed the unpredictability and ambiguity of negotiating encounters while in motion.

This chapter explores the ways that e-scooter riders and pedestrians choreographed their encounters while on the move. The first section examines the notion of flow to explore e-scooter riders' and pedestrians' experiences of rhythm and sensory engagements, and how their diverse experiences and expectations can lead to unsettled encounters. The next section discusses the ways that e-scooter riders and pedestrians attempted to address the unsettled nature of sharing space by drawing on informal norms and codes to organise their movement in shared transport spaces. Finally, this chapter explores the communicative tactics used by e-scooter riders and pedestrians to make sense of and coordinate each other's movements.

Flow and stasis

Pedestrians and e-scooter riders portrayed shared transport spaces as sites of flow and stasis. They described how their movements were disrupted by encounters with people and objects, and implicit in their accounts of stasis was the notion of flow. As outlined in Chapter 2, it has been argued that continuity is a shared expectation of travel, because transport users have a preference for maintaining their flow of movement (Jonasson, 2004). Participants in the current study emphasised their desire to maintain momentum when they described situations where

their flow was disrupted and diverted. In transport research, the notion of flow has been portrayed as a unifying concept because it represents shared goals of progress, equilibrium and momentum (TRA, 2017). This understanding of flow as unifying corresponds to the concept of place-ballet and how people come together and synchronise their movements to maintain flow. However, investigating e-scooter riders' and pedestrians' diverse experiences and expectations of travel illustrates the challenges of flowing together. This section explores how e-scooter riders' and pedestrians' flows were interrupted and what this meant for their rhythms and sensory engagements.

The differential time-space rhythms of walking and e-scooter riding disrupted the ways e-scooter riders and pedestrians shared space. Participants talked about the temporalities and spatialities of placing one foot in front of the other, which contrasted to rolling along on wheels. These different rhythms meant that e-scooter riders and pedestrians had to adjust their flow to coordinate with each other. For example, e-scooter riders commented on the incongruity of e-scooter riding in the presence of congregations of pedestrians:

> *…there will be lots of people around and you kinda have to like stop, start, stop, start. That's annoying. Or if you are crossing like some lights um and you're stuck behind people and you can't really swerve to go round them because there are cars waiting on this side, so you just have to kinda get off…or ride slowly behind them until you can like swerve around them. So it is mainly a speed thing, it's more annoying than anything (Elliot, e-scooter rider)*

> *…they often take up the whole footpath…if you are on road bike or an e-scooter you can't really go onto the grass, so if you've got like a scooter with a bell it is OK, but otherwise you're kind of a bit stuck behind them, which is…not the greatest (Hayley, e-scooter rider)*

Rhythm is described as improvisational because individuals adapt their movements in accordance with their circumstances (Edensor, 2013). E-scooter riders in this study drew attention to the ways that they adapted their rhythms to the circumstance of sharing space with pedestrians, by moving at walking pace or in a stop-start way. However, they expressed frustrations about synchronising their rhythm and pace with other path users. Their experiences correspond to Vannini's (2014) argument that speeding up or slowing down can give rise to affective experiences, especially when the situation is out of one's control. The e-scooter riders' feelings of frustration towards slowing down could be attributed to their momentum

being disrupted. Previous studies have outlined how transport users, including cyclists and e-scooter riders, attempt to avoid having to stop or slow down because of the satisfaction they associate with maintaining forward momentum (Brown, 2012; Hunter & Lloyd, 2020; Spinney, 2008). Additionally, e-scooter riders' desire for fast and frictionless travel could be understood in relation to their experience of time. Many of the participants commented on the ways that they used e-scooters to meet the demands of everyday life because e-scooters are time-efficient:

> *…the scooters are on demand as long as there is one around, it can get me to work faster and when I need it (Rebecca, e-scooter rider)*

> *It's just nice, it's fast, I love that it is so fast because my, if I walk it takes me half an hour and if I drive [an e-scooter] it's ten minutes and that's twenty minutes saved… (Leon, e-scooter rider)*

It has been argued that our expectations and perceptions of travel have been reshaped by the compression of time and space (Vannini, 2014). For example, Solnit (2001) contends that the human body is considered increasingly inadequate for transportation, and transport technologies, such as cars and e-scooters, are perceived as a means of travelling faster and further. This conceptualisation of the body as inadequate offers insights into why riding an e-scooter is an appealing transport option, and why e-scooter riders felt frustrated at having to adjust their pace and rhythm in the presence of pedestrians.

In contrast to perceiving the body as inadequate for transportation, pedestrians in this study reflected on the positive experiences of travelling by foot. Cushla spoke about her experience of walking to and from work:

> *I just like to hear what's going on, it gives me a sense of enjoying the change of scenes, seasons and, you know, the sun and if it's a bit rainy, and just a chance to let my thoughts drift without having to think too much, because once I get to work it's all pretty full on so it's kind of like yeah, wind down time or warming up time into the day (Cushla, pedestrian)*

Cushla's description of walking as an opportunity to let her mind and body wander supports Solnit's (2001) argument that walking is a contemplative activity. Cushla emphasised her enjoyment of walking by comparing her experience of thoughtfulness while walking to the *"full on"* nature of her working day. While transport is a means to meet the demands and

schedules of everyday life, Cushla described walking as an escape from the demands of everyday life. This comparison of the rhythms of walking and working also highlights how time is experienced. In a study of urban walking in London, Middleton (2009) discusses the various temporalities of travelling by foot and how pedestrians experience the expansion and contraction of time. Cushla's experience of walking could be interpreted as an expansion of time that provided the opportunity to *"let her thoughts drift."* This experience contrasts to how e-scooter riders portrayed waiting for an opportunity to overtake slow-paced pedestrians, which could be interpreted as a contraction of time.

Investigating e-scooter riders' and pedestrians' sensory experiences draws attention to the differences in the ways they flow through space and engage with place. E-scooter riders highlighted how they experienced their environments through the sensation of their movement, called "kinaesthetic sensation" (Taylor, 2003). Hayley mentioned an embodied experience of kinaesthetically engaging with the environment:

> *...having like the wind in your hair while you are scootering... (Hayley, e-scooter rider)*

Other e-scooter riders discussed kinaesthetic sensations of riding causing discomfort:

> *...I commented to the people after my first ride, I said, "I didn't actually realise how jarry the whole thing was going to be," and it goes right through to your arms as well... (Paul, e-scooter rider)*

> *...some of the paving stones through town, because they are all slightly different, some of them are really rough, they just about, I had to just about stop at one stage because the vibration was just too much [laughing] (Kathryn, e-scooter rider)*

Taylor (2003) contends that the kinaesthetic sense takes over while on the move and our other sensory engagements with the surrounding environment become incidental to the sensation of moving. Similarly, e-scooter riders described the kinaesthetic sensation of riding an e-scooter "taking over"; for Paul the vibration felt when riding was experienced *"right through to your arms,"* and Kathryn talked about how the intensity of the sensation meant that she wanted to *"just about stop at one stage."* The notion that sensorially engaging with the surrounding environment becomes incidental to the sensation of motion (Taylor, 2003) is similar to Hall's (1966) argument that travelling at more than 5 miles per hour increases sensory deprivation.

However, e-scooter riders in this study referred to the ways that kinaesthetic sensations were enhanced rather than their other senses being deprived when travelling at a fast pace. Furthermore, Tuncer and Brown's (2020) study suggests that e-scooter riding is not a sensorially deprived activity; travelling by e-scooter was considered a way to explore the city and was likened to "strolling." Exploring e-scooter riders' kinaesthetic sensations highlights the differences in the ways e-scooter riders and pedestrians experienced their surroundings.

Pedestrians discussed experiencing sensations at a slower pace than e-scooter riders. They described moving spontaneously and visually engaging with the external environment, a style of walking labelled "discursive walking" (Wunderlich, 2008). Urry (2007) argues that the affordances of place can encourage slow, exploratory movement and taking moments to pause. However, pedestrians highlighted how opportunities to walk discursively and engage with place were diminished due to the presence of e-scooters:

> *I'm not saying it's totally spoilt, that would be way over the top but a layer of pleasure has been removed because now I can't stop and look at the ducks…or you know just coming back sort of enjoy, just stop and look at the people in the punts or whatever because I'm alert (Charlie, pedestrian)*

> *…you'll have multiple scooters whipping past and you'll have bikes whipping past. In that sense I have to be a little more switched on and careful, I can't be looking around at the lovely, you know, trees [laughing], what not, I have to concentrate a bit more… (Mel, pedestrian)*

Edensor (2000) describes how urban spaces are characterised by motion and speed, meaning that pedestrians' sensory engagements with the environment are limited because they move in a defensive manner. Similarly, pedestrians described the co-presence of e-scooters as incompatible with sensorially engaging with place because they were required to be *"alert"* and *"concentrate a bit more."*

Overall, participants' experiences of negotiating flows of people emphasised the precedence given to the continuity of movement. The pursuit of continuity can be understood as more than the desire to maintain physical movement but also the flow of feelings, sensations and thoughts. However, the pursuit of continuity can be at odds with other path users' expectations and perceptions of travel (Brown, 2012). E-scooter riders' desire for fast paced and fluid movement conflicted with pedestrians' exploratory and relaxing movement. The differential ways that e-

scooter riders and pedestrians talked about their experiences of time and space contrasts with the idea that transport users come together in time and space to make up a place-ballet (Seamon, 1980). Furthermore, the synchronisation of e-scooter riders and pedestrians was a negotiation, and could have undesirable outcomes, such as adjusting rhythms or forgoing sensory experiences. The following section outlines how e-scooter riders and pedestrians referred to the informal norms and codes of sharing space, which could conflict with or reinforce the different styles of movements described above.

Norms of sharing the path

Pedestrians and e-scooter riders discussed the informal norms and codes that they drew on to coordinate encounters on the path. Social norms direct individual behaviours and shape how society is organised (Fitt, 2015). In the context of transport spaces, norms are described as repetitive micro-movements that become embedded over time (Loukaitou-Sideris & Ehrenfeucht, 2009). The relatively recent arrival of e-scooters meant that participants felt uncertain of the normative behaviours of negotiating encounters. The concept of disorientation draws attention to how "bodies can lose their orienting relations to other bodies, to actions and to situations" (Bissell & Gorman-Murray, 2019, p. 707), and is useful for analysing the encounters between e-scooter riders and pedestrians and their seemingly uncertain relations. E-scooter riders and pedestrians described how they negotiated these relations by drawing on their experiences of other transport modes, such as cycling and driving, to "reorient" themselves and make sense of encounters. Although participants described some norms of the path as shared among path users, they also commented on the unpredictable nature of encounters. Their experiences of negotiating uncertainties on the path illustrate the challenges of codifying and articulating informal norms, because the ways that path users respond to encounters depends on the situation.

The relative novelty of e-scooter riders and pedestrians sharing space meant that the participants adopted "new" practices on the path. E-scooter riders and pedestrians emphasised the importance of being aware of what was going on around them, and discussed how the practices they engaged in facilitated awareness. Some participants made reference to other transport spaces and modes, such as walking across the road or riding a bike, highlighting that being aware of other transport users is considered a normalised transport experience. However, in the context of e-scooter riders and pedestrians sharing space, pedestrians described being aware of e-scooters as a new experience:

It's probably pretty amazing that there aren't more accidents because unless you, I mean I've learnt to look left and right to check who's coming on either side, but you know, I've had to learn to do that to keep myself sort of, not so much safe but just to be aware of potential hazards if someone is coming up (Cushla, pedestrian)

…that huge adjustment to, you can't walk along the pavement thinking like a pedestrian, you have to walk along the pavement like someone who might be going to cross a road, a busy road, and just completely change your way of thinking (Charlie, pedestrian)

E-scooter riders were portrayed as unexpected in pedestrian spaces, meaning that pedestrians felt that practices of using the path had to be renegotiated, which Charlie emphasised was a *"huge adjustment."* Pedestrians described adopting practices, such as checking over their shoulder before moving across the path or looking both ways before stepping out from a property, akin to how transport users move on *"a busy road."* Hayley also made reference to another mode of transport when describing checking her surroundings as an e-scooter rider:

I think if I didn't bike places before I started riding e-scooters I would probably be a bit more obnoxious [laughing] 'cause I think having a few experiences where people obviously aren't aware that you are there just makes you more aware for next time, so you are always kind of looking whether or not someone is going to run out in front of you or try and turn in front of you when you are on an e-scooter… (Hayley, e-scooter rider)

In contrast to the pedestrians' experiences of adjusting to the presence of e-scooter riders on the footpath, Hayley described e-scooter riding in shared transport spaces as familiar because of her experiences of cycling. These participants drew on their experiences of other transport modes and spaces to view e-scooter riders and pedestrians sharing space as both a familiar and unfamiliar experience.

The participants discussed their experiences of motorised e-scooters in pedestrian spaces, and the practices of driving cars and using the road being replicated in these spaces, which will be referred to as the "motorisation of the path." The participants drew attention to the way path users moved in an orderly manner, and how the path functioned *"kind of like a wee road"*:

I would expect people to mostly not take up the whole path so either leave room on the other side, sort of, of the path to go either around them or for people coming the

other way and mostly to keep kind of to the left of it, kind of like a wee road. And I find most people actually do that… (Hayley, e-scooter rider)

I will always walk on the left-hand side, 'cause I think that's just how we, we have grown up doing it, so I think most people kind of treat those shared pathways, even though they are not divided, as if they are a road (Anna, pedestrian)

Participants outlined how they would expect the path users to be organised into lanes, like on the road. Similarly, Delaney and colleagues (2017) found that designated shared path users referred to the road, which has well-established laws, norms and expectations, to organise their use of a designated shared path. The participants' accounts suggest that keeping to the left is a tacit agreement of sharing the path (Urry, 2007), which was emphasised by Anna who described how path users produce a centre line with their movements, even when there was not one present. Furthermore, Anna's description of keeping to the left on the path as something "*we have grown up doing"* suggests that it is not a new phenomenon, however, the advent of e-scooter riders sharing space with pedestrians has reinforced the significance of this practice. Participants approved of organising paths into lanes of traffic because it created designated space for path users:

I mean shared paths usually, you know, where there's bikes, e-scooters and pedestrians they kind of have an automatic sense of direction so it's basically on one side they are all going this direction, on the other side they are all going this direction, and there is barely any trouble (Leon, e-scooter rider)

Leon suggested that she did not have unwanted encounters on a designated shared path where path users were moving in an orderly way. This description of *"automatic"* movement on the path contrasts with how Jones (2005) describes the freedom of pedestrians, relative to car drivers and cyclists, to move idiosyncratically and to choose their own route. The "motorisation of the path" with the presence of e-scooters shares similarities with the way that the pedestrian experience was impacted by the introduction of cars. Hornsey (2010) describes how the introduction of cars in interwar time London was accompanied by the advent of ordering devices, such as traffic lights and road crossings, which were used to facilitate the speedy flow of road traffic whilst also ordering and regulating the movements of pedestrians. The presence of e-scooters on the path means that pedestrians are required to be responsive to motorised traffic both on and off the path.

While participants discussed how they made sense of transport spaces and encounters in relation to informal norms and codes, they also commented on the unpredictable nature of sharing transport spaces. They described experiences where movement on the path was not strictly ordered and questioned the extent to which norms are shared among path users. For example, the participants drew attention to how some social groups, such as tourists, were less likely to follow informal norms. The ways that the participants made sense of social groups is discussed further in Chapter 5. The participants also highlighted the ways that different transport spaces were spatially organised:

> *Yeah and most of the shared paths in town have like, actually have markings, sort of with a, well it's normally a bike, a picture with a bike going one way and a picture of a bike going the other way sort of show that there is that expectation so I think that most people follow that. I'm not sure if it would make a big difference or not… I would probably say so because the footpaths where they don't have that, people are sort of all over the show, so I think it does make a difference (Hayley, e-scooter rider)*

The differences in the organisation of footpaths and designated shared paths could be associated with the physical markings and expectations of how these spaces should be used. However, designated shared paths were also described as messy and complicated spaces:

> *…they've got the little symbol of a bike and a walking bit on there but still people just go all over the place, don't they? Focused on where they are going (Anna, pedestrian)*

> *…they are not necessarily keeping to the left, because of pedestrians and so on, I appreciate that, you can't just stay in your lane or anything, it was just all over the place (Charlie, pedestrian)*

The lack of organisation in shared transport spaces can engender negative reactions from transport users (Delaney et al., 2017). However, participants in this study recognised the challenges of sharing space and abiding by informal norms. Charlie described e-scooter riders overtaking slower pedestrians on a designated shared path and acknowledged *"you can't just stay in your lane"* referring to the norms of keeping to the left and moving in an orderly way. The different styles of movement employed by e-scooter riders and pedestrians, such as fast paced riding or discursive walking as discussed in the previous section, could offer insights into the disorderliness of shared transport spaces. For example, the desire to maintain

momentum might mean that path users overtake slower moving traffic rather than staying in lanes. James also drew attention to the dynamic nature of shared transport spaces:

> *…you shouldn't expect people to act in a particular way because if you do there is always a case where people don't and that's when the accidents do happen (James, pedestrian)*

James contested the idea of having expectations of other path users, contrasting with Smith's (2017b) description of "shared background expectancies" in shared spaces. Shared background expectancies are often understood in relation to rights to space, for example, it is expected that car drivers wait for pedestrians to cross the road at a pedestrian crossing (Smith, 2017b). While some participants made sense of their experiences of sharing the path in relation to norms or expectations, James' comment suggests that relying on norms can be problematic. This position is similar to Jonasson's (2004) argument that negotiating encounters is always a new and improvised experience, however, Jonasson also contends that new ways of acting in shared transport spaces are informed by an existing order. Exploring the participants' experiences of sharing transport spaces illustrates their various understandings of the existing order, or its lack, and their different approaches to negotiating encounters.

The informal norms of sharing transport space are not necessarily easy to articulate because of the complexities of negotiating encounters. The participants highlighted the challenges of delineating informal norms when they discussed the issue of speed. E-scooter riders are required to apply their own judgement about when it is appropriate to accelerate or decelerate, because what is considered an appropriate speed is subjective and situational. However, participants commented on the uncertainty of determining appropriate speed limits given that official guidance is vague. For example, Cushla emphasised the disconnection between the maximum speed of e-scooters and the speed that is appropriate for riding on the footpath:

> *…it's almost because an e-scooter user they can go faster, it's like they feel like they have got the right to go faster regardless of who else is using the footpath. I think it's because it is a grey area… (Cushla, pedestrian)*

Participants also felt that official guidance was unclear because it did not quantify an appropriate seed limit:

And even though there is a not very easy to find sign saying "slow" with a bicycle, I mean honestly, I mean I had to actually search for it and nobody at speed is going to see it and what does "slow" mean? (Charlie, pedestrian)

"Slow down to a speed that is safe for you and others," again what is that? I don't know what's safe (Paul, e-scooter rider)

Figure 8: A sign advising cyclists to ride slowly on Cambridge Terrace, October 2020 (Source: Author)

The participants described signs and messaging advising transport users to travel slowly as problematic because they were open to interpretation (Figure 8). Paul's comment is in reference to the NZTA's "e-scoot friendly" campaign that advises riders to consider how others experience their speed. However, participants drew attention to their diverse experiences of speed, with e-scooter riders regarding the speed and momentum of riding an e-scooter positively, and pedestrians recounting the frightening and frustrating experiences of sharing space with fast paced e-scooters. Similarly, a recent study from Singapore found that e-scooter

riders and pedestrians had divergent perceptions of acceptable e-scooter riding speeds (Che, Lum, & Wong, 2020). The study utilised immersive virtual reality scenarios of encounters to assess how e-scooter riders and pedestrians experienced speed, and identified that pedestrians rated slower speeds as safer than e-scooter riders did (Che et al., 2020). These differential experiences of speed highlight the challenge faced by e-scooter riders in deciding when to accelerate or decelerate. Charlie commented on the need for e-scooter riders to engage in ongoing decision-making when she suggested that e-scooter riders should ride to the conditions:

> *I think the allowable speed is much too great um and given that, people should, as in a car, move at a speed that's appropriate for the circumstances, I mean you might be allowed to drive at fifty [kilometres per hour], you know, once you have moved out of the immediate city centre but is it appropriate? Clearly in many places not (Charlie, pedestrian)*

Riding to the conditions on the path involves taking into account how others experience speed. In a study of pedestrians and mountain bike riders sharing paths, Brown (2012, p. 811) used the term "avoiding harm but not alarm" to refer to incidents where physical contact is avoided but path users still experience discomfort because of the relative speed of another path user. There is clearly a need for path users to be attuned to others to make sense of how they feel, to avoid both harm and alarm. However, as discussed in this section, e-scooter riders and pedestrians sharing space is a novel and a "disorienting" experience (Bissell & Gorman-Murray, 2019), meaning being attuned and establishing relations is challenging.

This section has outlined the ways that e-scooter riders and pedestrians depicted the place-ballet of transport spaces as both orderly and disorderly. The "motorisation of the path" was described as productive of efficient and organised movement, as well as disruptive to pedestrians because they adopted new practices and adjusted to the presence of e-scooter riders. Participants highlighted the ways that sharing transport space was unpredictable and how the order of these spaces was being continually negotiated. The disorderliness of shared transport spaces means that transport users are required to negotiate encounters with others, which involves the processing of information to make sense of the situation and consider fellow path users. The ways that pedestrians and e-scooter riders utilised communication tactics to give and receive information is explored further in the following section.

Communication tactics

Clear communication is considered instrumental for the establishment of trust (Urry, 2004), and is important in the context of e-scooter riders and pedestrians sharing space because of their diverse expectations of being on the move, as discussed above. However, participants in this study highlighted how their diverse expectations contributed to the challenges of engaging in and interpreting forms of communication, and establishing trust. This section explores how e-scooter riders and pedestrians drew on visual and auditory forms of communication to negotiate encounters, as well as their experiences of situations where there was a lack of tangible communication.

As discussed throughout this chapter, the relative speed of e-scooter riders and pedestrians played a profound role in their experiences of sharing space, including how they communicated. Participants talked about how the speed of e-scooters impacted the communication between e-scooter riders and pedestrians, for example, Mel described coordinating an encounter with a fast-approaching e-scooter rider:

> *…if you've got an e-scooter coming up on the same footpath in the opposite direction, you know, you have to be, you have to figure out who is going to go on which side because the scooters are so much faster than you are walking, you know, the onus is on you to make sure you get it right, otherwise you might get bowled over (Mel, pedestrian)*

The fast pace of an e-scooter rider reinforced the need to communicate and avoid colliding, however, it also restricted the communication that was possible. Mel's description of having to *"figure out"* the encounter with an e-scooter rider suggests that the giving and receiving of information was limited. This description of the relationship between speed and communication is similar to Jensen's (2010) observations of the types of encounters between public space users who travel at different speeds; he labelled the encounters between fellow pedestrians as "direct negotiations," because pedestrians are able to pick up on detailed micro-movements, and the encounters between pedestrians and cyclists as an "estimation of the situation." Paul also acknowledged the significance of speed and suggested that decelerating to a slow pace was important for receiving information and negotiating encounters with pedestrians:

I watch the person who is coming towards me and I make absolutely sure that we are both going to go to the left or the right, or whatever, and I slow down quite considerably… (Paul, e-scooter rider)

E-scooter riders and pedestrians described their attempts to coordinate encounters with each other, however, Jensen's (2010) comparison of "direct negotiations" and "estimations of the situation" raises questions about the extent of information available between e-scooter riders and pedestrians. The challenges of giving and receiving information relates to the discussion above about e-scooter riders' and pedestrians' divergent sensory experiences of being on the move. Despite the challenges of communicating, investigating e-scooter riders' and pedestrians' experiences of coordinating encounters highlighted the usefulness of drawing on communication tactics.

The participants' accounts drew attention to the importance of visual communication for negotiating encounters in shared transport spaces. The types of visual communication that participants referred to were body language, facial expressions and eye contact, which were described as instrumental in communicating intentions and feelings. Goffman's (1972) work provides useful terminology for understanding how path users communicate visually; he labelled the tools of reading and displaying gestures and gazes as "scanning" and "externalisation," which are used to negotiate interactions. By "externalisation," Goffman refers to the way that individuals make information about themselves and their intentions available to others, also referred to as an "intention display" (Goffman, 1972). Participants emphasised the importance of eye contact for establishing intentions on the path:

Also bikes and scooters, because they're both going fast, you know, they definitely have to have some contact, some communication of some sort whether it's eye contact or whatever because I've actually seen a couple of near misses with cyclists and scooters…(Mel, pedestrian)

…if they are coming from the front most people can see you, you can make eye contact and you can work out which way you are going (Paul, e-scooter rider)

Making eye contact meant that path users could coordinate their movement, avoid abrupt interruptions and maintain their flow. Eye contact is considered to be important for establishing trust and intimacy between people; Simmel writes that "one cannot take through the eye without at the same time giving," thus establishing eye contact is considered a reciprocal act

(Simmel as cited in Urry, 2004, p. 30). Participants highlighted the reciprocity of making eye contact when referring to the co-accomplishment of coordinating encounters. However, eye contact can also be a way to exert power and control, for example, a gaze can carry disciplinary power (Jones, 2012). Hayley commented on experiences where pedestrians communicated their negative feelings towards e-scooter riders through their gaze:

> *You do get the odd, like if you go past someone on a scooter they look at you a bit disapprovingly… (Hayley, e-scooter rider)*

Negative reactions such as this could be interpreted as a reaction to the specific actions of an e-scooter rider or as a reaction to the practice of e-scootering generally. The different ways that path users make sense of reactions can shape how encounters are coordinated. For example, Rebecca drew attention to how she interpreted pedestrians' body language and facial expressions:

> *Usually I like to make eye contact with pedestrians as I approach and you can usually gauge from their face how they feel about e-scooters on footpaths. If you get a smile then that is a good sign, sometimes the disapproval can show on someone's face and I have also had people stop in their tracks…which is a clear sign they are uncomfortable (Rebecca, e-scooter rider)*

Rebecca commented on how she adjusted her movements in accordance with how she interpreted pedestrians' feelings, such as by reducing her speed or giving pedestrians more space on the path. Brown (2012) defined this process of being mindful of the gestures and gazes of other path users as "affective attunement." Being attuned to other path users is a way to receive information as well as communicate respect and attentiveness. Rebecca described making eye contact as a way to signal her openness to negotiating encounters with pedestrians, illustrating the reciprocal nature of eye contact. While visual forms of communication can carry various meanings, this "facework" was instrumental in coordinating encounters (Jensen, 2006).

Participants emphasised the significance of face-to-face communication when they described situations where there was a lack of tangible communication. The significance given to communicating visually raises concerns about blind and visually impaired pedestrians sharing space with e-scooter riders, which have been expressed by walking and disability advocacy

groups, as discussed in Chapter 1. Polly, who is visually impaired, described the challenges of anticipating and negotiating encounters:

> *…I guess that is the other thing with e-scooters is a sighted person can make eye contact with them and do that whole "is it my turn to go, is it your turn to go" sort of body language and eye contact. I can't do that. I can't do any of that (Polly, pedestrian)*

Polly commented on the reading and predicting, or the "turn-taking," of encounters. Smith (2017b) describes the practical organisation of encounters in a similar way by comparing it to the sequential "turn-taking" of having a conversation, where participants pick up on cues of when it is their turn to speak. Face-to-face communication is considered to be important for the flow of conversation (Urry, 2004), similar to the way that participants talked about the significance of face-to-face communication for the negotiation, or conversation, of an encounter. Pedestrians also commented on the lack of tangible communication with e-scooter riders when riders approached from behind. Some participants described how e-scooters made a whirring noise, however, the relatively quiet nature of e-scooters meant that they had a tendency to *"sneak up"* on pedestrians:

> *In terms of the e-scooters…they are a concern, they quite often sort of sneak up on you from behind and there's very little sound to warn of them coming, they are actually very, very quiet (Polly, pedestrian)*

> *…so I was walking and I was actually walking past an elderly couple so I pulled out but unbeknownst to me there was an e-scooter coming up behind me and I didn't hear them so, you know, I pulled out walking and they pulled out as well but you've still got people coming the other way so it's like, you know, I have to trust that they know what they're doing, that they can see (Cushla, pedestrian)*

As mentioned above, visually communicating is important for building trust between strangers (Urry, 2004), therefore in a situation where there was a lack of tangible communication, Cushla commented on how she had to assume she could trust a passing e-scooter rider. However, establishing trust on the path is complex, especially because e-scooter riders and pedestrians have divergent expectations of how space should be shared. For example, Anna talked about the uncertainty of an encounter with a fast paced e-scooter rider, and how this was compounded by a lack of communication:

> *…if someone was coming flying down towards you and I thought "oh I'm not sure what they are going to…" yeah I have moved and let them continue on their straight path (Anna, pedestrian)*

This lack of communication corresponds with the concept of "civil inattention," which is the term Goffman gives to the minimal communication between strangers. Civil inattention involves registering others who are in close proximity to ensure there is no physical contact, but without acknowledging or recognising them (Jensen, 2006). However, even non-communication is filled with meaning, and inattention can be strategic because the responsibility for the situation's outcome is transferred to someone else (Jonasson, 2004). Anna described taking responsibility for the situation; she acted defensively by conceding space on the path and stepping out of the way. Pedestrians are particularly disadvantaged in encounters where there is lack of tangible communication because they feel vulnerable, which is discussed further in the following chapter.

While participants described feeling uncertain of how to respond to communication, they also felt unsure about engaging in some forms of communication. Specifically, some e-scooter riders felt apprehensive about sounding a bell to warn pedestrians of their approach. The participants had diverse perspectives on the appropriateness of e-scooter riders using bells because this auditory form of communication could bring about various reactions from path users. Some pedestrians spoke positively about e-scooter riders using bells because they encouraged awareness on the path:

> *…it would be nice if they had bells or something…just so you know something is behind and you can be, you know you might be deep in a conversation or thinking about something else…but something that just reminds you that this is a shared space (Charlie, pedestrian)*

Similarly, a study on cyclists' and pedestrians' experiences of designated shared paths found that most pedestrians reported that cyclists using their bells was helpful, however, the use of bells was not common among the cyclists (Hatfield & Prabhakharan, 2016). Participants in the current study offered insights into why people choose not to use bells:

> *…but it's as if I was telling them to get out of my way kind of thing, I mean it's not, it's just making them aware. I feel a bit weird (Elliot, e-scooter rider)*

> *And I know sometimes in New Zealand ringing a bell on a bike or a scooter sort of implies irritation, but again I compare it to Germany, everybody rings the bell, it's not regarded as being rude at all. It's "hey, I'm here, I'm coming through" (Paul, e-scooter rider)*

E-scooter riders were aware that pedestrians could find bells alarming and frustrating, for Elliot this meant he rarely used bells on e-scooters because he was concerned about causing tension. Participants commented on how a different sounding bell might dissipate the tensions caused by the sound of the bell. For example, Rebecca suggested that a *"friendly ding"* of the bell could be more appropriate for alerting pedestrians:

> *...it can frighten them a little, however, normally I...ding it a couple of times to try and, you know, try and give a friendly ding, however that works (Rebecca, e-scooter rider)*

Regardless of the sound of a bell, Polly discussed how she took issue with e-scooter riders' use of bells because of where e-scooters were ridden:

> *... that still really annoys me, it's like they're saying "get out of my way, get out of my way, I'm on a scooter and you're in my way" and I'm sort of like "well you're on a scooter…you shouldn't be on the footpath in the first place, you move, don't ask me to get out of your way just because I inconvenience you, this is a footpath" (Polly, pedestrian)*

Pedestrians' contestation of bells could also be interpreted as the contestation of e-scooters in pedestrian spaces. Polly viewed the use of bells as inappropriate because it disrupted her expectations of how transport spaces for pedestrians should be used. This uncertainty over e-scooter riders' use of bells corresponds to various studies that have identified that cyclists' use of bells can generate mixed reactions from pedestrians (Brown, 2012; Delaney, 2016; Simpson, 2017). Brown (2012) highlighted how mountain bike riders have to negotiate the ambiguity of using bells on paths shared with pedestrians, because bells disrupted pedestrians' expectations of quietude on rural paths, yet pedestrians were caught off-guard when mountain bike riders approached without warning. Similarly, e-scooter riders have to negotiate between making pedestrians aware of their presence and disrupting their experience of walking. The perception that the use of bells is disruptive to expectations of how spaces should be used provides insight into how communication tactics are interpreted in relation to rights to space.

Participants discussed using communication tactics to give and receive information, in order to control how they themselves were perceived and to make sense of other path users. They discussed the challenges of communicating while on the move, which raises questions about the extent that trust can be established between these different transports users, and whether trust is necessary for the coordination of encounters. E-scooter riders and pedestrians commented on the ambiguity of some forms of communication, such as the use of bells and situations where there was a lack of tangible communication, highlighting the unsettled relations between these transport users and uncertain rights to space.

Conclusion

This chapter has explored e-scooter riders' and pedestrians' experiences of sharing space, which contest the "togetherness" of a place-ballet, because the synchronisation of movement involves encountering others and negotiating differences. The relative speed of e-scooter riders and pedestrians, which was a reoccurring theme in this chapter, causes tensions between them and adds complexity to the negotiation of encounters. Investigating e-scooter riders' and pedestrians' experiences of sharing space highlighted their diverse expectations, in terms of styles of movement, the spatial organisation of encounters and forms of communication, raising questions about their compatibility in shared transport spaces. Participants characterised encounters between e-scooter riders and pedestrians as uncertain, unpredictable and ambiguous, reflecting the novelty of e-scooter riders and pedestrians sharing space, and their divergent expectations of sharing space. The unsettled relations between e-scooter riders and pedestrians highlighted how their rights to space are being negotiated on the ground through encounters. The following chapter explores how participants made sense of rights to space in relation to the meanings ascribed to spaces, people and objects.

Chapter 5: Rights to space

Exploring transport users' perceptions of rights to move through space is important for understanding everyday transport experiences (Middleton, 2018). The previous chapter discussed the immediacy of e-scooter riders' and pedestrians' experiences of sharing space, and the micropolitics of their interactions. This chapter explores meanings that mediated e-scooter riders' and pedestrians' encounters, providing further insight into the social relations and power dynamics between e-scooter riders and pedestrians. Meaning is constructed through and within mobile practices (Spinney, 2009); how individuals ascribe meanings to movement is dependent on the wider context of social norms, values and ideas (Adey, 2009). E-scooter riders and pedestrians drew on meanings associated with spaces, people and objects when discussing their experiences of sharing space, and exploring these meanings highlights how they made sense of rights to space. The notion of belongingness is useful for exploring how transport users interpret rights to space through encounters (Cook et al., 2016b). Belonging is conceptualised as "place-belonging," referring to the personal feeling of place attachment, and as "politics of belonging," which is instrumental in reinforcing and contesting socio-spatial inclusion and exclusion (Yuval-Davis, Anthias, & Kofman, 2005). Participants referred to meanings to describe the belongingness of transport users in transport spaces and in the social order of these spaces. The concept of affect, defined as the energetic outcomes of bodily engagements with the world (Conradson & Latham, 2007), is also drawn on to explore participants' experiences of different transport spaces, and how they perceived their own and others' belongingness in these spaces.

This chapter begins by discussing e-scooter riders' use of various transport spaces and the meanings ascribed to public spaces and personal space. The following section explores how participants drew on assumptions about social groups to interpret other path users and their competencies of sharing the path. Finally, the ways that participants interpreted other path users according to clothing items and objects is discussed.

Transport spaces

The introduction of e-scooters to city streets has rapidly changed the urban mobility landscape, whilst transport infrastructure has remained relatively unchanged. As previously discussed, e-scooter riders are permitted to ride in various transport spaces, however, they face contestation from other transport users. The contestation of e-scooter riders' use of space resonates with enduring debates about the delineation of transport spaces and rights to space (Tuncer et al., 2020). For example, in car-dominated transport systems, the construction of bicycle infrastructure and the resulting redistribution of transport space is often met with opposition (Wild, Woodward, Field, & Macmillan, 2018). E-scooter riders' decisions of where to ride are complex because of the competing uses and meanings of spaces. Conversations with participants highlighted how they made sense of space at different scales; they discussed their experiences of transport spaces, how they conceptualised personal space, and the feelings of vulnerability that mediate these perceptions of space.

E-scooters have been labelled as a "hybrid" form of mobility because they are used in transport spaces predominantly designed for other modes of transport (Tuncer & Brown, 2020). E-scooter riders in this study discussed riding on roads, footpaths, in designated shared paths and in cycle ways, and participants commented on the ability of e-scooter riders to "transform" into the other modes of transport used in these spaces:

> *...people will go as fast as they can, dodge the lights if they can, you know, I've seen people whip round the lights, you know, suddenly turn into a pedestrian and then turn into a car at the intersection because they don't want to be held up in the lights (Paul, e-scooter rider)*

> *The funny thing is that when you are on the road you have to obey the road rules and that's not always that convenient [laughing], you have to sit there for ages. When you are on the footpath you don't always have to do that, you can act like, more like a pedestrian. Or is that just in my head, I'm not sure (Kathryn, e-scooter rider)*

Similar to the hybridity of e-scooters, cycling is described as having "in-between qualities" of the relative freedom of walking and the more regimented driving, because of the ways cyclists move through different transport spaces (Jones, 2005). Researchers describe how cyclists move in improvisational ways and re-interpret transport spaces to create their own spaces, according to their experiences and affective capacities (Jones, 2012; Spinney, 2008). Participants in the

current study portrayed e-scooter riders exploiting their "hybridity" to maintain their momentum, overcome obstacles and avoid having to abide by rules and expectations, such as having to act *"more like a pedestrian."* While e-scooter riders' ability to "transform" into other modes of transport was portrayed as a resource, e-scooter riders faced constraints when riding in transport spaces predominantly for other modes of transport.

E-scooter riders and pedestrians questioned where e-scooters belong in the transport system. They highlighted the ways that they made sense of transport spaces and how these meanings were disrupted by arrival of a novel form of transport. The conceptualisation of how mobilities are "staged" from above and below, which was discussed in Chapter 2, is useful for understanding how meanings are ascribed to transport spaces (O. B. Jensen, 2013). Mobilities are "staged from above" through urban planning and design, for example, the physical features and demarcations of transport spaces shape patterns of use (Amin, 2008), standardise transport users' movements (Spinney, 2008) and delimit the rights and responsibilities of different transport users (Smith, 2017a). Transport spaces are not neutral spaces because they are ascribed with meanings about who should use them and how. For example, participants drew on the rationale that *"footpaths are for pedestrians"* to portray e-scooter riders as out of place on footpaths:

> *They felt like they had the right of way on the footpath and I firmly believe that footpaths are for pedestrians (Polly, pedestrian)*

> *I've heard people say you know, a "footpath has the word 'foot' in it, it means human feet, it doesn't mean wheels," you know, and that has to be dealt with, rather than just ignored (Paul, e-scooter rider)*

Participants emphasised pedestrians' rights to the footpath because of the perception that pedestrians have limited access to transport spaces, whereas e-scooters are permitted in a range of transport spaces. Additionally, footpaths have been "territorialised" (Amin, 2008) by the regular movement of *"human feet"* through these spaces, meaning that the presence of *"wheels"* in pedestrian spaces is unexpected and an adjustment for some pedestrians, as discussed in the previous chapter. Comparatively, participants' felt that it would be less of an adjustment for e-scooter riders to use bicycle infrastructure:

> *...so adding the scooter to the bike one is not a big deal... (Paul, e-scooter rider)*

I would use a bike path yes if there's one there I would stick to the bike path, yeah. Because it sort of seems right (Kathryn, e-scooter rider)

The comment about simply *"adding"* e-scooter riders to transport spaces used by cyclists, such as in Figure 9, suggests that e-scooter riders meet the expectations of how bicycle infrastructure should be used, potentially due to the similar characteristics of e-scooters and bicycles, including their physical dimensions and their speed (Tuncer & Brown, 2020). Furthermore, the participants' perception of the compatibility of e-scooter riders and cyclists corresponds to existing literature that promotes bicycle infrastructure as a suitable space for e-scooters, as discussed in Chapter 1 (Gössling, 2020a). However, an e-scooter rider described an experience that contested the perceived compatibility of e-scooter riders and cyclists:

...one time, when I shared the bike path with a bike, he came from behind me and I heard him so I tried to get to the side, and not only did that person then pass me but he then kicked me and that was- so I ended up in the roses (Leon, e-scooter rider)

Leon talked about how she rode her e-scooter at a slower pace than cyclists so she perceived her movement to be incongruous with the "standardisation of movement" in cycle lanes (Spinney, 2008). This experience raises questions about the extent of the compatibility between e-scooter riders and cyclists, and whether riding e-scooters in cycle ways is promoted because it is less contentious than riding on the footpath.

Figure 9: An e-scooter rider using a separated cycle path (Source: Angela Curl)

The participants' experiences of using designated shared paths suggested that these paths were less prescriptive than footpaths and cycle ways. Designated shared paths were not designed for a single mode of transport, and typically accommodate the movement of cyclists and pedestrians (Figure 7). The ways that the participants described designated shared paths correspond to the principles of shared space design, which are spaces shared by car drivers, cyclists and pedestrians (Figure 6). As discussed in Chapter 2, it is claimed that no mode of transport is prioritised in shared spaces (Hamilton-Baillie, 2008), and Kathryn characterised a designated shared path in a similar way when she talked about feeling welcome to ride there:

> *I feel like I'm allowed to be there a bit more, but I don't think that my behaviour changes, I'm still mindful of the people walking around (Kathryn, e-scooter rider)*

Furthermore, the mixing of different modes of transport in shared space is said to intensify the sense of anticipation (Simpson, 2017), which corresponds to the way participants in the current study commented on there being an expectation of encountering e-scooter riders on designated shared paths:

> *Yeah so I mean I quite like that commute in terms of the shared space, you know, the paths…are quite wide so there are people biking and walking so I think there is an expectation of shared space there a bit more than on a regular footpath so I feel quite comfortable there (Rebecca, e-scooter rider)*

> *Yeah well I suppose I am probably more conscious on a shared path that that's going to be the case whereas on a footpath you don't necessarily think that they are going to come up behind you, or in front, or come at you… (Anna, pedestrian)*

Proponents of shared space design claim that these spaces can create more sociable transport spaces, because different transport users come together and negotiate encounters (Hamilton-Baillie, 2008). The participants' accounts suggest that the social dynamic between e-scooter riders and pedestrians was altered on designated shared paths compared to transport spaces that were designed primarily for a single mode of transport. However, as discussed in Chapter 4, the unsettled relations between e-scooter riders and pedestrians created challenges for negotiating encounters, on both designated shared paths and footpaths. Furthermore, transport users are not equally positioned to participate in shared transport spaces, which can produce feelings of vulnerability.

The mixing of different transport users is productive of affective experiences. Simpson (2017) describes how transport infrastructure shapes compositions of bodies, materialities and objects,

giving rise to affective experiences. Discussing affective experiences is problematic because affect is considered pre-cognitive and difficult to articulate through language, however, it is possible to examine the effects of affective experiences, such as how and where people choose to travel (Jones, 2012). A common experience among e-scooter riders and pedestrians was the feeling of vulnerability, due to the sense of threat from other transport users. For example, some e-scooter riders felt uncomfortable mixing with motorised transport on the road, and for that reason they preferred to ride on the footpath:

> *It's really nice to be off the road as well. That's lovely because then you feel really safe (Kathryn, e-scooter rider)*

> *I've seen people ride on the roads, which is super, seems super dangerous. I've been like in a car behind them like "what are you doing" when there's a footpath, or even a bicycle lane is better than riding on the actual road. But yeah I definitely ride on the pavement, share space with pedestrians, I don't go on the bicycle lanes either (Elliot, e-scooter rider)*

Similarly, a recent study identified that e-scooter riders chose to ride on the footpath because of the difficulties of sharing space with motor vehicles, including discrepancies in speed, a lack of protection and the potential to be harmed in a collision (Tuncer & Brown, 2020). In the current study, e-scooter riders emphasised their concerns about the road when they described the conditions that they considered to be appropriate for riding on the road:

> *…and if, as happened the other day…there's just no traffic at all, I'm happy to go on the road and I have done that before too but as soon as the traffic comes out…I retreat to the footpath if it is getting, you know, even denser (Paul, e-scooter rider)*

> *I try not to ride on the road again that would be for my personal safety but if there is a bike lane there and it's, you know, a nice wide road or it's a very, very quiet road then I will um ride on the road (Rebecca, e-scooter rider)*

E-scooter riders' accounts of riding on the road under certain conditions illustrates the changeability in affective experiences, such as according to the time of day and level of traffic. Their experiences also highlight the significance of non-human features that mediate encounters between transport users (Bissell, 2010), including the design and layout of transport spaces and the presence of vehicles. Pedestrians also talked about how they felt vulnerable because of the presence of vehicles on the footpath:

> *Well they're on an electric vehicle and I'm on foot and potentially they could run me over and do me some damage, so vulnerable. And they're going quickly and I may not always be able to react in time so um yeah, always sort of vulnerable if those things are around (Polly, pedestrian)*

> *…it's usually the person getting crashed onto that's going to take most of the impact, not the e-scooter drivers themselves… (James, pedestrian)*

Similar to the e-scooter riders in Tuncer and Brown's (2020) study, in the current study both e-scooter riders and pedestrians felt threatened by sharing space with motorised transport. However, e-scooter riders have the ability to overcome feeling vulnerable on the road by using transport spaces shared with pedestrians, which can then cause pedestrians to feel vulnerable. Although the mixing of different transport users can produce various affective experiences, this section has focused on the feelings of vulnerability to highlight the similarities and differences of e-scooter riders' and pedestrians' affective experiences. Maintaining personal space, as discussed below, can be understood as a way to manage the intensity of affective experiences of sharing space.

The concept of personal space is useful for understanding how feelings of vulnerability are engendered. Participants in this study drew attention to how they perceived personal space and the implications for sharing space with others. Goffman (1972, p. 29) describes personal space as "the space surrounding an individual, anywhere within which an entering other causes the individual to feel encroached upon." The boundaries of an individual's personal space bubble are described as tacit because they become aware of the boundaries when they are breached (Low, 2003). Elliot talked about being aware of his personal *"borders"* as an e-scooter rider and moped rider:

> *…I guess because it is so small so if it was me riding in the middle of the road, it's basically just me, like my borders would be further out than the actual scooter itself, if that makes sense? If I was riding like a moped I still have a little bit of space around me kinda like, I don't know, it creates space around me as opposed to this like, just a human in the middle of the road on like basically a board or a plank with two wheels on it. Um yeah so you feel a lot smaller on it (Elliot, e-scooter rider)*

Elliot described feeling insecure when riding an e-scooter on the road. This feeling of insecurity when riding on *"a plank with two wheels on it"* contrasts with the experience of travelling in a car, which is labelled as a "metal cocoon" (Beckmann, 2001). Urry (2006) describes how

cars create a sense of private space in public for drivers and passengers to inhabit. A car can create a pleasant experience for its inhabitants, while creating a hostile experience for those outside of it (Jones, 2012). This was emphasised by Elliot who envisioned a personal space bubble as a way to create private space in public, and overcome the lack of protection afforded by an e-scooter in spaces shared with cars. Low (2003) highlighted how the size of an individual's personal space bubble varies in accordance with their situation and relationships to others. Participants discussed how different modes of transport require more or less personal space, for example, Elliot talked about how a moped commands more space than an e-scooter, and Paul also talked about how a runner requires more space than a pedestrian:

> *So, I guess the common factor is speed, if you are not going terribly fast you can manage anything but if you are going flat out, it's just like a runner, a runner needs a bit more space than a walker to deal with, you know, obstacles and unexpected things happen (Paul, e-scooter rider)*

Paul's description of the relationship between a path users' speed and their personal space relates to the findings of a study that utilised the concept of personal space to investigate how the movements of personal mobility vehicles, such as e-scooters, are experienced in pedestrian spaces (Pham, Nakagawa, Shintani, & Ito, 2015). This study identified that as the speed of a personal mobility vehicle increases so does the personal space required by pedestrians (Pham et al., 2015). Participants in the current study portrayed personal space as a buffer zone to deal with the uncertainty of sharing space, which was especially important when path users were travelling at a fast pace. Furthermore, participants highlighted how the significance of personal space varies in accordance with the design and layout of transport spaces. For example, participants commented on how transport users relate to each other when using wide paths:

> *I think, I see people feeling, or looking quite relaxed as they just wander around. That's quite nice, not busy walking all down one side of the footpath, and it's just that open, lovely, relaxing space (Kathryn, e-scooter rider)*

> *Because when you are on those big shared pathways, because they're so big and safe um you can get a bit complacent, I think, with noticing what is going on [laughing] (Mel, pedestrian)*

Wilson (2011) describes how in limited space transport users become more aware of their personal space boundaries and how they relate to fellow space-sharers. This corresponds to how Kathryn described walking on paths with ample space where practices of sharing the path,

such as *"walking down one side of the footpath,"* were less of a concern. Maintaining personal space could be considered a social barrier to avoid engaging in the spatial practices and communication tactics that were discussed in the previous chapter, or perhaps these spatial practices and communication tactics are required when personal space is limited.

E-scooter riders' and pedestrians' experiences of transport spaces highlight the ways that they interpreted the belongingness of transport users in these spaces. E-scooter riders are considered out of place in different transport spaces because they disrupt the meanings ascribed to these spaces, offering insights into the ways that encounters between e-scooter riders and pedestrians are perceived and played out. The participants described transport users' rights to space being contested at different scales, from the right to move through transport spaces to the right to encroach on personal space, and how these perceptions of rights to space were shaped by affective experiences. Their experiences also highlight the variability in perceptions of space as their experiences of transport spaces and personal space were shaped by the co-presence of transport users and the dimensions of transport spaces. The next section discusses the ways that the participants framed the belongingness of e-scooter riders and pedestrians in transport spaces according to assumptions about social groups and their spatial practices.

Social groups

People have the ability to observe others and quickly make assessments about their characteristics and the purpose of their journey (Fitt, 2017). As path users see and are seen by others, they become aware of their similarities and differences to others, and through these interactions they construct ideas about themselves and others (Loukaitou-Sideris & Ehrenfeucht, 2009). Participants drew on stereotypes about age, gender and tourists to explain practices and competencies of sharing the path. Stereotype refers to an oversimplified representation of the characteristics that belong to a particular group of people, and are commonly applied to strangers who can easily be identified as belonging to a social group (Fitt, 2015; Gatersleben & Haddad, 2010). Some participants drew on these stereotypes to construct themselves as competent path users and to stigmatise problematic e-scooter riders. Pedestrians' and e-scooter riders' discussions of social groups illustrates the ways that rights to the path are understood and contested in relation to meanings about social groups.

E-scooter riders and pedestrians interpreted the spatial practices of other path users in relation to stereotypes about social groups. In this study, participants described young e-scooter riders

as impetuous, older adults as vulnerable and tourist path users as oblivious. For example, Charlie talked about how she identified e-scooter riders as tourists:

> *…rather than the commuter scooters we've got the tourist scooters and often they are going too quickly or don't make allowances for, that people are going to step out from their property onto the pavement (Charlie, pedestrian)*

Charlie described *"tourist scooters"* as irresponsible and identified them as outsiders by comparing their actions to local *"commuter scooters."* Participants' descriptions of tourist e-scooter riders resonate with discourses about badly behaved tourists (Higgins-Desbiolles, 2019). For example, a news article reported that there is animosity towards tourist car drivers in New Zealand, who are stereotyped as dangerous and distracted drivers (Macdonald, 2017). Stereotypes assigned to different social groups can be inaccurate, however, they can also be instrumental in understanding behaviours and motivations of groups of people (Christmas, Helman, Buttress, Newman, & Hutchins, 2010). Participants talked how they made sense of tourist pedestrians' spatial practices on the path in relation to stereotypes about tourists:

> *If you are in the slow lane, if you're a slow walker, stay over on the left, this is tricky if you are sharing space with tourists who are going to be walking generally in the middle, you know, taking photos and videos and stuff (Cushla, pedestrian)*

> *Sometimes there is quite a lot of people if it is a sunny day or there has been like a bus load of tourists... there's often lots of people milling around especially, they are often taking photos… so they are not really looking at what is coming and going (Hayley, e-scooter rider)*

> *…if I can see a group of people getting off a bus who…look like foreign tourists, you know, I'll slow myself down…my expectation is that area is, yes it's a shared footpath, but it's also a tourist spot and if it is full of tourists then, you know, I need to adjust (Rebecca, e-scooter rider)*

The participants described tourist pedestrians as moving in a meandering way and visually engaging with the urban landscape. Some pedestrians in this study talked about moving in a similar way, as discussed in the previous chapter, however, the participants talked about this style of movement to emphasise the visitor status of tourist path users. The tourist pedestrians' utilisation of the path conflicted with some participants' expectations of how the path should be used, such as for purposive movement organised into lanes, meaning that participants felt

they needed to be mindful of tourists. While the accuracy of stereotypes is debatable, path users draw on stereotypes to make quick judgements about fellow path users and their competencies of sharing the path.

Participants drew on stereotypes about age and gender to make assumptions about the competencies of other path users. The term competency is used to refer to the skills and abilities of sharing the path. The ways that participants described young people's familiarity with e-scooters contrasted with how they spoke about older generations' relationship to e-scooters. This could be because of the perception that e-scooters are typically associated with young people, for example, in a survey about e-scooters, Fitt and Curl (2020) found that young people were the social group mentioned most frequently in the respondents' free text comments. In the current study, Rebecca assumed that young pedestrians were competent at sharing the path with e-scooter riders:

> *I mean even coming here this morning, there were some school kids walking through and as I approached them, you know, I sort of slowed down and, you know, they sort of moved over and I mean they were young so they're probably OK with that (Rebecca, e-scooter rider)*

Rebecca may have assumed that young pedestrians were comfortable with sharing space because they have the agility to move aside or a blasé attitude towards encounters with e-scooters. She suggested that her presence may have been contested if she was sharing space with members of a different social group when she said *"they were young so they're probably OK with that."* Rebecca drew on assumptions about young people's competencies to highlight her own legitimacy to be riding an e-scooter on the path, suggesting that understandings of legitimacy may vary according to who else is present. Paul described an occasion where he made assumptions about a young person's familiarity with e-scooters:

> *I was near a bus stop and I asked a very young person, I said "aw can you…," she said "I don't know how they work," so here was me stereotyping, thinking because she was a young person that she would know how to use it, a scooter (Paul, e-scooter rider)*

Paul's encounter with a young person challenged his assumption that young people were familiar with renting and riding e-scooters. Bissell (2016) contests taking assumptions, such as those made about social groups, for granted. Instead, he argues that focusing on the micro-political events of encounters can highlight the ways that differences between social groups are

engendered (Bissell, 2016). The participants drew attention to the ways that assumptions about differences were challenged and reinforced through encounters. For example, Paul's encounter with a young person described above disrupted his assumption about young people, whereas Kathryn talked about an encounter that reinforced her assumptions about young males:

> *I did see someone else put in a position where they would've felt really uncomfortable, like you know, standing, stopping on the corner to cross waiting for the lights to change and the e-scooter whizzing up in front of them… it's really disconcerting for people standing there … he wasn't stopping at the corner like the pedestrians were, he was going too fast, he frightened them. So unnecessary. Young man, again (Kathryn, e-scooter rider)*

Participants constructed young males in particular as problematic e-scooter riders because of the perception that they did not display competencies of sharing the path. Kathryn's comment "*young man, again"* suggests that this experience reinforced her ideas about the young male identity. Research from San Jose, California found that males rode e-scooters faster than females, and the difference in riding speeds was more pronounced in spaces shared with pedestrians (Arellano & Fang, 2019). These differences in social groups' e-scooter riding practices could serve to shape perceptions about an individual's competencies of sharing the path and future encounters. For example, participants talked about their experiences of encountering young e-scooter riders:

> *I have certainly seen, 'cause there are lots of school kids that go up and down there, people that are definitely not eighteen or however old you are supposed to be to like hire a Lime scooter, with two of them on them, and they are looking a bit wonky and going a bit fast, which doesn't look very safe (Hayley, e-scooter rider)*

> *But then again I am a bit older than young males who are impatient [laughing], or young people generally who want to go as fast as they can, and if they have got good reactions that's great, but what they have to realise is the people they are passing um, may not have the same sort of speed of reaction they have (Paul, e-scooter rider)*

These participants questioned the competencies of *"young people"* and *"school kids,"* because of their experiences of encountering reckless e-scooter riders. While young pedestrians were constructed as competent at sharing space with e-scooters, young e-scooter riders were constructed as incompetent space-sharers. Assumptions about the competencies of social

groups informed participants' experiences of sharing space, and how they made sense of their own and others' legitimacy on the path. The ways that participants interpreted the legitimacy of path users is discussed further below in relation to stigma.

The concept of stigma is useful for analysing the relations between e-scooter riders and pedestrians, and how rights to space are perceived. Goffman (1963, p. 3) described people who are stigmatised as having "an attribute that is deeply discrediting within a particular social interaction." The "particular social interaction" referred to in this study is between e-scooter riders and pedestrians, and participants drew attention to e-scooter riders' "discrediting attributes." E-scooter riders spoke about being aware of the negative perception of e-scooters, because of their own personal experiences and because of the portrayal of e-scooters in the media, and they sought to distance themselves from problematic riders. Paul drew on stereotypes about young people to differentiate himself from this group:

> *I mean I probably ride differently from the young, I certainly don't go as fast as the young…I'm really careful if I'm on the footpath (Paul, e-scooter rider)*

Aldred (2013) outlines how cyclists are stigmatised within the UK's car-dominated transport system, and how some cyclists resist stigmatisation by mobilising stigmatising discourses against other "bad cyclists." Cyclists' resistance towards stigmatising discourses has been associated with the concern that these discourses could tarnish the perception of all cyclists (Aldred, 2013; Skinner & Rosen, 2007), which is similar to the ways that e-scooter riders in the current study resisted the negative perception of e-scooters by directing these perceptions at other e-scooter riders. Kathryn considered the riding practices of young males to be a threat to the perception of e-scooters:

> *And I think, potentially, someone of my age can help that weirdly. Because I think some of the negative perception is based on, and I don't mean to be, but young men like going fast on everything… (Kathryn, e-scooter rider)*

Kathryn suggested that the uptake of e-scooters by an older age group could shift the public's perception of e-scooters, which could be attributed to the assumption that older riders are more cautious and courteous than younger riders. Regardless of who is riding an e-scooter, and the social group that they belong to, e-scooter riders still face stigmatisation because they use transport spaces designed for pedestrians, which is considered a "discrediting attribute" (Goffman, 1963). However, the threat of stigmatisation can be a civilising process, because our

actions are shaped by how we expect to be interpreted by others (Jensen, 2006). Rebecca talked about being aware of how her actions were interpreted by other path users:

> *I suppose if people see me do that, they might be more inclined to not tag everyone with that same brush, whereas I think if you see an e-scooter in the middle and you are anti-e-scooters that's just gonna feed into "well these people don't, you know, behave appropriately", so I guess I do take that on as a bit of a thing (Rebecca, e-scooter rider)*

Rebecca attempted to shift the perception of e-scooter riders through her actions, such as by moving obstructive e-scooters. Despite e-scooter riders' efforts to resist stigmatising discourses and manage how they were perceived, they still face the challenge of using transport spaces that are primarily for the use of other modes of transport, as discussed in the previous section. In contrast to e-scooter riders, pedestrians generally did not talk about how walking is perceived as mode of transport, or overtly displaying responsible walking practices.

E-scooter riders and pedestrians made sense of their experiences of sharing space in relation to assumptions about social groups. Their accounts of different social groups highlighted how ideas about belongingness on the path are informed by competencies of sharing the path. Assumptions made about social groups and their competencies play a role in shaping how path users relate to each other and themselves. This was highlighted by e-scooter riders who attempted to resist stigmatising discourses about e-scooter riders by constructing themselves as "good" path users. Exploring the participants' accounts of different social groups has provided some insight into the construction of a social order, how this intersects with spatial practices, and shapes understandings of rights to space. The next section explores the ways participants discussed rights to the space in relation to the meanings ascribed to material objects.

Material objects

Transport is often viewed through a utility-dominated paradigm, this means that minimising the time spent travelling and the distances travelled are priorities, and that the legitimacy of transport users can be impacted by their non-utility associations (Aldred, 2015). Participants talked about how they made sense of transport users and the utility of their travel in relation to material objects, including the clothing items and the equipment associated with travelling by foot and by e-scooter. Among the participants there was an underlying sense that e-scooter

riding was a less serious mode of transport because of the clothing items and equipment worn and carried by e-scooter riders. Participants differentiated transport users according to items they wore and carried, and made comparisons between cyclists and e-scooter riders, and between e-scooter owners and e-scooter renters. Their discussion of clothing items and equipment highlighted how they understood the legitimacy of e-scooter riders.

Participants mentioned the material objects associated with walking and e-scooter riding and drew attention to how they convey meanings about pedestrians and riders. Michael's (2000) research on "mundane technologies" highlighted how objects, such as walking boots, can impact relations between humans because objects communicate meanings. Objects are made sense of, and engaged with, from many different perspectives and can play a role in shaping mobile experiences and encounters (Michael, 2000). For example, some participants spoke about how they understood less mobile pedestrians' experiences of the urban environment according to their mobility aids and devices:

> *…when I was just walking down here I noticed…there's big stickers on the footpath now saying this is a shared, you know, e-scooter friendly, which I thought "oh that's quite interesting," I haven't seen them anywhere else but I was just actually thinking to myself that in that area where I walk it would be quite good because there's often people in wheelchairs, or on walking sticks, and Zimmer frames around that way as well… (Anna, pedestrian)*

Anna commented on how "e-scoot friendly" footpath decals (Figure 10) could be useful to make path users aware of how less mobile pedestrians experience shared transport spaces. Participants also mentioned other objects associated with walking, such as devices for listening to music or taking photos, and what these meant for mobile experiences and encounters. However, generally participants made fewer mentions of the clothing items or equipment associated with travelling by foot compared to travelling by e-scooter.

Figure 10: An "e-scoot friendly" footpath decal on Cambridge Terrace, August 2019 (Source Author)

Participants made judgements about the utility status of e-scooter riders according to their clothing items and equipment. Exploring the ways that participants spoke about the utility of e-scooter riding offers insights into how e-scooter riders' legitimacy as path users is perceived. Scootering, without an electric motor, has typically been associated with child's play, however, recent research highlighted how adult e-scooter riding has become a more normalised experience since the introduction of shared e-scooter services (Fitt & Curl, 2020). Participants in the current study portrayed e-scooter riding as a playful or recreational activity, because of their perceptions of who rides e-scooters and the ways they are ridden. The non-utility associations of e-scooter riding were emphasised when participants made comparisons between e-scooter riders and cyclists. For example, pedestrians described cyclists as more *"kitted out"* than e-scooter riders because of the clothing items and equipment associated with cycling:

> *…most of the people that are on those bikes… are commuting to work and they are really well kitted out, they've got hi-vis vests, gear on that you would, there's no way that you could not see them, and lights and helmets (Anna, pedestrian)*

> *So I think probably on the whole, and I mean, I think cyclists, you kind of know what part of your vision you are looking for a cyclist because often they're wearing the neon and they've got the, you sort of, you kind of know what they are going to look like. E-scooters, probably less of a known hazard um, I don't know if that makes any sense, but yeah I'd probably feel safer around a cyclist than them… (Cushla, pedestrian)*

The participants suggested that e-scooter riders were less visible than cyclists. This could be attributed to the relative novelty of e-scooters and the less established norms of wearing specialist clothing and equipment, or the pressure experienced by cyclists to make themselves visible in spaces shared with cars (Aldred, 2015). Furthermore, wearing a helmet while cycling is required by law in New Zealand, whereas wearing a helmet while e-scooter riding is a recommendation rather than a legal requirement. In contrast to the serious and sporty image of cycling, e-scooter riders spoke positively about wearing everyday clothing when riding an e-scooter:

> *…it doesn't really matter if you are wearing a nice dress or nice shoes because they are not going to get ruined (Hayley, e-scooter rider)*

> *I had a couple of women shout out to me a few weeks ago "you go girl" [laughing] because I had my frock on and my handbag and my grey hair blowing in the wind, see I like that (Kathryn, e-scooter rider)*

The nature of riding an e-scooter, standing up-right with little physical exertion, meant that participants could wear clothing items that may be considered impractical for cycling. The everydayness of e-scooter riders' attire could potentially make e-scooter riding an attractive transport option, especially because the clothing items and equipment associated with cycling can create the perception that it is a risky or specialist activity, and can be alienating for some people (Daley & Rissel, 2011; Goodman, Green, & Woodcock, 2014). However, e-scooter riders' casual and everyday clothing raises questions about how path users understand the utility and the legitimacy of this mode of transport.

E-scooter riders described the lack of specialist clothing items and equipment associated with e-scooter riding as a convenience, however, some e-scooter riders and pedestrians considered e-scooter riders wearing particular clothing items and equipment to be important for visibility and safety. As well as giving off a serious and sporty image, the clothing items and safety equipment associated with cycling can be a deterrent for potential cyclists because of the apparent preparation involved in travelling by bike (Goodman et al., 2014; Green et al., 2012). Correspondingly, participants in the current study celebrated the little preparation involved in riding an e-scooter. For example, participants who rented e-scooters described the convenience of not wearing a helmet:

…the stuff about like always putting on a helmet that's great but that is not really the point of having an e-scooter readily available being that you are not like going to just carry a helmet around with you (Hayley, e-scooter rider)

I mean if you are doing it regularly enough you might have your own helmet but you know for people like me who just do sort of randomly, I'm not going to buy a helmet (Paul, e-scooter rider)

…it's got nothing to do with sharing [helmets], I don't care about that sort of thing, because, you know, I know actually that it's fine. It's really just got to do with that feeling of jumping on and going without any hindrance or, you know, that freedom kind of feeling (Kathryn, e-scooter rider)

They commented on how carrying a helmet counteracted the spontaneity, or the *"freedom,"* of renting an e-scooter, which meant that they were unlikely to carry one. However, participants also talked about how e-scooter riders' lack of helmets created issues for sharing space with other transport users. For example, e-scooter riders who did not wear helmets felt unsafe riding on the road, and a pedestrian talked about feeling concerned about sharing space with helmetless e-scooter riders:

I don't know whether people particularly have any more control, or less control, on them or the bike but yeah they just seem to kind of, I think I am more worried about the e-scooter rider because they don't have a helmet on or most of the time, they don't… (Anna, pedestrian)

The participants' accounts suggest that helmets created the perception that e-scooter riders were protected, and drew attention to how this was important for being accepted in transport spaces. Existing research found that cars were more likely to pass a cyclist in close proximity when the cyclist was wearing a helmet, which could be attributed to the perception of safety or competency associated with helmets (I. Walker, 2007). Leon, similarly, discussed how her clothing and equipment signified that she was a safety-conscious rider:

OK I have usually a yellow jacket on so you can see me in the dark and I have a helmet, I'm a wuss [laughing]. I want to be as visible as possible, what else do you want me to do? I cannot drive on the road (Leon, e-scooter rider)

Leon, who owned her e-scooter, suggested that wearing a helmet and a hi-vis jacket symbolised her legitimacy as a path user, and she emphasised this when she asked *"what else do you want me to do?"* to be accepted in spaces shared with pedestrians. Existing research on cyclists' attire has highlighted how judgements are often made about a cyclists' rights to space according to what they are wearing (Aldred, 2015; Daley & Rissel, 2011). For example, Aldred (2013) outlined how cyclists who make themselves visible with clothing and safety gear risk being considered "too much" of a cyclist. Similarly, a study in New Zealand highlighted how cyclists are perceived negatively by motorists because of their clothing; Lycra-clad cyclists are interpreted as inconsiderate road-sharers and can engender negative reactions (TRA, 2017). Similar to cyclists, the meanings ascribed to e-scooter riders' clothing items and equipment mediate encounters and can be drawn on to reinforce and contest their rights to space.

The casualness and playfulness of e-scooter riding are potentially beneficial for recruiting people to engage in this mode of transport, however, in the context of e-scooter riders and pedestrians sharing space, the construction of e-scooter riding as a less serious activity is problematic. Participants drew attention to the importance of specialist clothing items and equipment for safety and visibility, which means that the everyday attire of e-scooter riders could give rise to the impression that they are incompetent space-sharers. However, the participants' accounts also highlight how material objects are made sense of in various ways, so the relationship between e-scooter riders' attire and their rights to space is unclear.

Conclusion

The meanings that e-scooter riders and pedestrians ascribed to transport spaces, social groups and material objects provide further insight into their experiences of sharing space. Exploring these meanings is useful for understanding spatial practices, social relationships and, potentially, travel practices. The examination of meanings has highlighted how the belongingness of e-scooter riders is interpreted. E-scooter riders were considered out of place in some transport spaces, less serious or safe than other transport users, and were stigmatised by fellow e-scooter riders based on social characteristics. Both e-scooter riders and pedestrians were critical of e-scooter riders' legitimacy, which contrasted to how they talked about pedestrians. The next chapter discusses macro-level structures that shaped the meanings and experiences of pedestrians and e-scooter riders sharing space.

Chapter 6: Common good

Shared transport services, such as e-scooter companies, fill gaps in transport systems that are not currently being serviced by the state (Stehlin, Hodson, & McMeekin, 2020). It has been argued that "code is the new concrete" because shared transport services often rely on location-based services via smartphones and existing transport infrastructure, rather than the construction of new infrastructure (Crist, 2018; Stehlin et al., 2020). However, shared transport services, which are associated with neoliberal governance and have been labelled "austere mobilities," transfer the responsibility for transitioning to low-carbon mobility from the state to the individual (Nikolaeva et al., 2019). In this chapter, it is also argued that the lack of designated infrastructure and regulations for e-scooters means that e-scooter riders and pedestrians are required to take responsibility for their safety. In the context of neoliberal governance, the notion of "common good" is often mobilised to encourage individuals to take responsibility for managing societal problems (Freudendal-Pedersen, 2015). Participants in the current study highlighted what they considered to be common goods – public space, mobility and the propensity to share them – and how some people's actions did not support or contribute to the common good. They associated individualistic practices on the path with the business model of shared e-scooter services and the lack of e-scooter regulations.

This chapter explores how political and economic factors have shaped e-scooter riders' and pedestrians' experiences of sharing space. The chapter begins by discussing issues associated with the business model of shared e-scooter services. The following section explores the ways that participants talked about taking responsibility in shared transport spaces, the regulatory context of e-scooters and how regulations could be improved.

Private use of public space

Participants held various perspectives about the operation of private e-scooter companies in public spaces. Some participants regarded the availability of rentable e-scooters positively because they added vibrancy to the city, and provided a casual and convenient transport option. However, participants also reflected on the issues associated with the business model of shared e-scooter companies, because of the ways that rentable e-scooters moved through and took up public space. The participants' discussions of these issues corresponds to criticisms that have been directed at shared transport services. Scholars have argued that the "shared" transport services are driven by economic interests, rather than encouraging more equitable social and spatial relations (McLaren & Agyeman, 2015; Spinney & Lin, 2018). This section explores

how pedestrians' and e-scooter riders' experiences of shared resources – public space and rentable e-scooters – were shaped by the operation of e-scooter companies.

Participants portrayed some e-scooter riding practices as unintended consequences of the business model of shared e-scooter companies. They discussed the consequences of the cost of renting an e-scooter, for example, some participants commented on how the cost of renting an e-scooter was uneconomical meaning that they did not regularly ride e-scooters, and that some people were encouraged to buy their own e-scooters. Participants also associated the cost of renting an e-scooter with reckless riding practices, such as riding with more than one person on an e-scooter or at a fast pace. Paul described how riding an e-scooter at a fast pace was financially incentivised:

> *…there is a problem in that the charging process works on the basis of time not distance, so the motivation there is to go as fast as you can to get where you want to in the shortest time possible, and I'm not sure that that's a good idea but that's how it works… (Paul, e-scooter rider)*

Riders of rentable e-scooters were portrayed as "hacking" the system by reducing their time spent travelling. Similarly, a study of e-scooter riders' experiences in Paris found that paying per minute encouraged riders to travel at a fast pace (Tuncer & Brown, 2020). This perception of the cost of renting an e-scooter offers further insight into e-scooter riders' desire to maintain momentum, as discussed in Chapter 4, which is problematic for pedestrians. Such riding practices resonate with the concept of "negative reciprocity," referring to the ways individuals utilise communal goods to serve their own self-interest, which is an issue associated with shared forms of mobility (Bardhi & Eckhardt, 2012). Media reports have drawn attention to negative reciprocity and documented the abuse and abandonment of dockless bikes and e-scooters in cities around the world (Andelane & Fitzgerald, 2019; Ho, 2018; Rushe, 2017). Rebecca commented on how people may not look after rented e-scooters as well as they might if they owned them:

> *…I think that is probably because they get heavy use and obviously people don't treat them, necessarily as well as they'd treat their own, sometimes I get on them and they feel a bit rattly (Rebecca, e-scooter rider)*

In contrast, Leon talked about how owners of e-scooters take responsibility for maintaining their e-scooters:

> *…the vibrations of that basically unscrew the screws in the bits…if I had one of those days when it was particularly rough I have to tighten all my screws and that's just annoying. A few people have told me that they lost their screws [laughing]. That is when you then get tips off other [riders] and "oh yeah, do you still have all your screws?" "ah yes, I do," "if you ever lose one, Mitre 10 has them," just like that (Leon, e-scooter owner)*

Shared e-scooter services have been described as lowering the "barriers to use" of e-scooters, because the maintenance and charging of rentable e-scooters is not the responsibility of the rider (Tuncer & Brown, 2020). Leon highlighted the appeal of renting an e-scooter by describing e-scooter maintenance as *"annoying."* However, the lack of user ownership of shared e-scooters is associated with negative reciprocity because the ways they are ridden and parked can disadvantage other path users and future e-scooter riders.

A fundamental feature of the business model of shared e-scooter companies is the dockless nature of e-scooters. Pedestrians commented on dockless e-scooters punctuating city streets and disrupting their experiences of walking. For example, some pedestrians portrayed parked e-scooters as rubbish rather than a resource to be utilised:

> *…some of the scooters are getting a bit rusty, the paint's coming off, they are becoming a little bit more of an eye-sore too. They are gonna be more like that in two years' time when the scooters are really getting old (James, pedestrian)*

> *So that is the one thing about it, they look like litter to me when they are all over the place like that…I've never seen anyone but I've thought I wonder if people kick them over just for a- they probably do, I'm sure they do. So that is one bugbear about them (Anna, pedestrian)*

Pedestrians' portrayals of e-scooters as *"litter"* and an *"eye-sore"* emphasised how the presence of parked e-scooters disrupted their sensory engagements with place, as discussed in Chapter 4. Their description of parked e-scooters resonate with Aldred and Jungnickel's (2013) investigation of how parked bicycles are perceived and problematized. The authors draw on Mary Douglas' concept of "matter out of place" to examine the liminal position of stationary bicycles within urban streetscapes, which they associated with the marginalisation of cycling as a mode of transport in the UK (Aldred & Jungnickel, 2013). This conceptualisation of bicycles as "matter out of place" is useful for analysing how parked e-

scooters on city streets are perceived as obstructive and aesthetically displeasing. The obstructive nature of parked e-scooters was a significant issue among pedestrians:

> *…you could at least just put it to one side, it's about, I guess it's about courtesy for other users on the footpath as well, don't just leave it there on the corner in the middle because you couldn't think of anywhere else to leave it (Cushla, pedestrian)*

> *…if they are lying down on the ground which often you did see them, and then they would be lying across the footpath but if someone is in a wheelchair, or even someone pushing a pram, or on a mobility scooter, or a Zimmer frame, or anyone who is a little bit immobile that's using that footpath, that's actually a real danger for them because they are not going to be able to move them out of the way… (Anna, pedestrian)*

> *One of the things that I find most annoying is where they're left. And that they're most often left in the middle of the footpath creating a barrier for not only myself but people with physical disabilities to get around as well… they're not often put neatly and tidily to one side, people just get off them wherever they feel like… they literally just drop them where they go, sometimes lying down, sometimes standing up and they're just another obstacle for me to find my way around (Polly, pedestrian)*

> *… I once saw a really horrible um situation where there was a blind woman who was walking down [the street]…and there was a scooter parked perpendicular across the footpath and she couldn't, you know, couldn't get over it and so she stepped out into the street, and it's a super busy street and this was the middle of the day and I was just horrified thinking "oh my god, someone is going to hit her" and it really made me angry. And I thought "how dare that person", you know, lazy lazy you just make it so difficult for people with disabilities, obviously people in wheel chairs would struggle as well if a scooter is parked that way (Mel, pedestrian)*

Participants were particularly concerned about the ways that parked e-scooters, whether lying down or upright, made navigating transport spaces more complex and dangerous, especially for people who are less mobile (Figures 11 and 12). Their experiences of encountering parked e-scooters also highlight how e-scooter riders and the people responsible for charging them are constructed in relation to the ways that e-scooters are parked. Among the participants there was a sense of annoyance towards the people who were responsible for parking e-scooters because of the unthinking way they had changed transport spaces. Similarly, a study in Shanghai found

that abandoned dockless bikes on city streets were symbolic of a disregard for public space users and public resources (Spinney & Lin, 2018). Drawing comparisons between parked e-scooters and other objects can highlight why they are considered "matter out of place." For example, wheelie bins for council rubbish collection may also be obstructive for transport users, however, wheelie bins generally belong to a nearby property and are positioned at the kerbside periodically. This contrasts to "abandoned" e-scooters whose users often remain anonymous and it is uncertain who should be responsible for them.

Figure 11: E-scooters obstructing a footpath on Gloucester Street, August, 2020 (Source: Author)

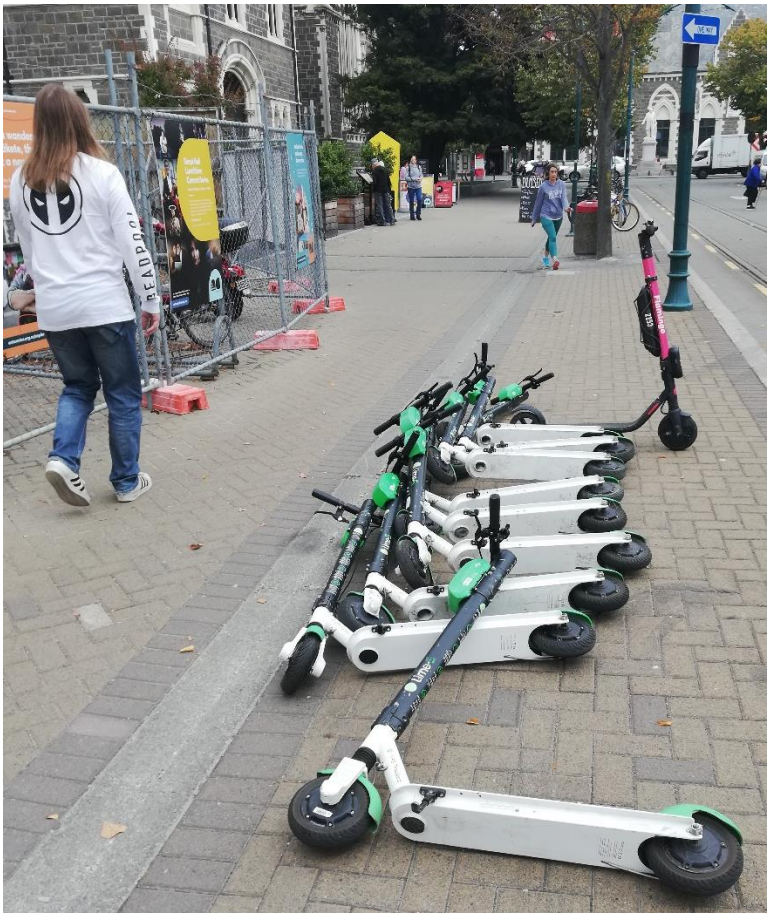

Figure 12: E-scooters lying down on a footpath on Worcester Street, March 2020 (Source: Author)

Participants were also concerned about the number of parked e-scooters and how they were distributed. Mel talked about the number of e-scooters available to rent and suggested that it was excessive:

> *I think there may possibly be a few too many scooters around, like the sheer volume of them. I don't know how well they are all being used, but I see a lot of them parked up a lot of the time, I don't know if somebody has done an analysis of the actual usage, and whether or not we're at capacity, whether there are too many of them out there. It looks to me like there are too many…I mean if they were all being used then obviously, that's not a problem. But I just see so many of them parked everywhere, not just on the shared pathways but on my whole journey to and fro, it does seem to be saturated (Mel, pedestrian)*

Mel's observation of paths *"saturated"* with e-scooters could be due to e-scooter companies' tendency to cluster e-scooters in city centres (Curl & Fitt, 2020). While dockless mobility services have the potential to improve access to transport because devices can be widely

distributed throughout cities, as compared to docked mobility services, the distribution of dockless e-scooters is often shaped by commercial interests (Lo et al., 2020). Charlie commented on the distribution of e-scooters being demand driven:

> *I notice the scooter people leave them parked outside in the morning because they are going to be the target audience (Charlie, pedestrian)*

In contrast, Hayley highlighted how there was unmet demand for e-scooters in a suburban area:

> *…I always think it would be so much nicer if they parked them along [a nearby street], well it would be more convenient for me [laughing] but lots of people park on our street and go into town so I feel like they would be quite popular so I don't know how they decide where to park them (Hayley, e-scooter rider)*

Shared micromobility services are described as "imploding" urban space, because central areas are prioritised and less central areas are not (Stehlin et al., 2020). Stationary e-scooters can create issues for access to transportation for both e-scooter riders and pedestrians, because of how they are distributed in cities by e-scooter companies, and how they are parked haphazardly by riders.

Whilst rentable e-scooters are shared among users, the label of e-scooter companies as "shared" is problematic. This is because the operation of e-scooter companies is associated with inequitable access to space and mobility as e-scooters are sometimes used in ways that serve the interests of individuals, rather than collective interests. The participants associated the lack of ownership of e-scooters with negative experiences of walking and renting e-scooters. Pedestrians' experiences of walking were disrupted by the ways that stationary e-scooters litter and obstruct space, and the ways that e-scooter riders move through space. Furthermore, e-scooter riders' experiences of renting an e-scooter were impacted by the location and condition of e-scooters. The participants' accounts of the operation of e-scooter companies raises questions about whether e-scooter companies or users should be responsible for the e-scooter riding and parking practices that disrupt pedestrians. The next section explores the ways that responsibility was discussed by participants and the regulatory environment that shaped pedestrians' and e-scooter riders' experiences.

Responsibility

Conversations with e-scooter riders and pedestrians highlighted the ways that they interpreted the responsibilities of sharing transport space. They discussed the lack of designated transport space and regulations for e-scooters, meaning that they felt the need to take responsibility for their own safety. Their accounts of individual responsibility correspond to the notion of "responsibilisation," which is related to neoliberal governance and refers to the way that responsibility is shifted from the state to individuals (Liebenberg, Ungar, & Ikeda, 2015). As previously discussed in relation to shared space design, it is claimed that the absence of regulations creates sociable transport spaces as transport users are required to negotiate encounters as they move through space (Hamilton-Baillie, 2008). Furthermore, recent research has suggested that having minimal e-scooter regulations allows for the innovation and evolution of e-scooter services (Fearnley, 2020). However, participants in the current study highlighted the inadequacy of the current e-scooter regulations and the need for change to address the risks of sharing space.

The participants' accounts of negotiating encounters resonate with discourses of mobile riskiness. Transport spaces and particular groups of people are understood as risky because of the unsettled nature of travelling and interacting (Doughty & Murray, 2016). Participants discussed various transport experiences and characterised some transport users and practices as "risky":

> *I'm sure you've heard it said, as well as I have that, you know, New Zealand drivers aren't particularly courteous so maybe it just says something about our national psyche, that you put us behind a wheel or in charge of something like a scooter and, you know, it's like "everybody get out of the way, I'm in charge," so whether that is something interesting about our way of thinking, there's possibly an element of that I suspect (Cushla, pedestrian)*

> *...I also think that ultimately, you know, you're gonna get people who are idiots regardless of if they are on a bike, on a scooter, or in a car so, you know, you can't sort of, can't get away from that... (Rebecca, e-scooter rider)*

> *...just with politeness...thinking about how someone else might react to you, thinking about how someone else might feel. I expect everybody to behave like that, obviously*

not everyone does. And we're not necessarily in a society that's geared towards making people do that, but that's what I expect nonetheless (Kathryn, e-scooter rider)

These participants drew attention to how they perceived some transport users as not contributing to the common good, regardless of the mode of transport. They suggested that transport users not being *"courteous"* or not acting with *"politeness"* was a cultural issue in New Zealand, corresponding to research that describes New Zealand's driving culture as competitive, as drivers behave in individualistic ways and do not take responsibility for sharing space with others (TRA, 2017). This concern about risky and individualistic practices on the path meant that some participants did not rely on other transport users to keep them safe from harm:

…like if you're really safe you can't guarantee that everyone else is so you've just got to kind of try and compensate for it a wee bit (Hayley, e-scooter rider)

So I don't want to get hurt, I've gotta, but I can't rely on them necessarily to make sure that they don't injure anybody else so I've gotta sort of take that first step (Cushla, pedestrian)

The participants talked about how they took responsibility for managing risks in shared transport spaces, such as engaging in precautionary acts as discussed in Chapter 4. Green and colleagues (2012) claim that the ability to manage risks and avoid harm is constitutive of being a mobile citizen. In the context of cycling, they describe the citizen-traveller as a prudential risk-assessor who is knowledgeable, assertive and alert (Green et al., 2012). This description of the mobile citizen suggests that transport users have an obligation to take responsibility for themselves and to contribute to the common good. However, participants' accounts of sharing space contrast with discourses about being self-sufficient at managing risks, for example, some participants commented on the need to be mindful of others and share the responsibility of negotiating encounters. This was because pedestrians, especially those who are less mobile, are disadvantaged by participating in "risky" transport spaces. Charlie drew attention to how pedestrians were disproportionately disadvantaged by sharing space with e-scooter riders:

…it's imposing a whole layer of responsibility on the pedestrian. I think that's what I object to, that we are being disadvantaged, but we are also picking up the responsibility for far greater care of ourselves, and I don't see that responsibility falling on the scooter riders at present (Charlie, pedestrian)

Charlie contested pedestrians taking responsibility for managing the risks of sharing space with e-scooter riders, and emphasised the vulnerability of pedestrians when she said that they are responsible for *"far greater care"* than e-scooters. Her description of how responsibility was "imposed" on pedestrians, due to the sudden arrival of e-scooters and the lack of clear guidance, corresponds to the notion of responsibilisation.

Participants associated the issues of e-scooter riders and pedestrians sharing space with the regulatory context of e-scooters. As discussed in Chapter 1, stakeholder groups consider the current e-scooter regulations, which were written before e-scooters become a popular mode of transport, to be vague and inadequate for today's travel practices. These concerns were shared by participants in the current study. While the participants acknowledged that there were official e-scooter regulations and information provided through e-scooter companies' apps, this guidance was described as a "grey area":

> *…but it's when it's a bit vague about where they are allowed to go. And I think because they are still, still a relatively new phenomenon, you know what are the rules? Are they supposed to be wearing cycle helmets in terms of safety? How fast should they really be going? I don't know… (Cushla, pedestrian)*

> *So there is a lot of confusion I think, um just about, I think for pedestrians, how to handle this, I don't know whether the people on the bikes feel confused… (Charlie, pedestrian)*

> *I mean I remember when the law change came for the road code for the right turn, it was basically in every newspaper that there was a change in the right turn, and I think it would help just in general to inform everybody… Because there have been so many articles about Lime scooters, and the new purple one, and the Flamingo… in the newspapers, but nowhere in the newspapers was any mention of the road code or, you know, "oh by the way, if you are using e-scooters, just follow these rules," nothing (Leon, e-scooter rider)*

Similarly, Tuncer and colleagues (2020) outlined how pedestrians faced challenges anticipating and negotiating encounters with e-scooter riders because of a lack of formal regulations. The ways that e-scooters "transform" transport categories and are used in a variety of transport spaces, as discussed in the previous chapter, potentially contribute to the uncertainties of anticipating and interpreting encounters with e-scooters. The participants highlighted the need for the current e-scooter regulations to be clarified and communicated,

and this was emphasised when they compared vague e-scooter regulations to the more regimented practice of driving a car. For example, participants referred to the enforcement of driving regulations to highlight the relative lack of enforcement of e-scooter regulations:

> *...you can't set a speed limit because you're not going to put cameras up for people [laughing] on scooters (Paul, e-scooter rider)*

> *...I know Lime scooters have rules that you sign up to, but they clearly, like one of them is don't double so they're clearly not adhered to, and it doesn't seem to be any punishment for that…because of the speed that they can go I would have thought that they should have some um laws, they need to start thinking about some legislation around well what do we do if people are riding them carelessly just as if people are driving carelessly (Polly, pedestrian)*

> *I mean, there might be these rather hastily brought in rules about age and speed but…has anybody ever been charged with speeding on a scooter? Does anybody pick up the children we see on scooters? I don't think so, I mean people, I'm sure police feel like they have got better things to do…there is…literally no policing of this, and no rules um other than self-imposed (Charlie, pedestrian)*

Although the participants acknowledged the difficulties of enforcing e-scooter regulations, their emphasis on enforcement illustrates the perception that regulation is not sufficient to deter rule-breaking behaviours. Cyclists also have a reputation for being "rule-breakers," because of the ways they contravene road rules and utilise different transport spaces (Daley & Rissel, 2011; L. Shaw, Poulos, Hatfield, & Rissel, 2015). However, several studies discuss the rationalities of cyclists' rule-breaking behaviour, and argue that cyclists' practices reflect the failure of transport planning and policy to address the needs of cyclists (Latham & Wood, 2015; L. Shaw et al., 2015; Spinney, 2008). Thus, Latham and Wood (2015) state that rationalities for cyclists' rule-breaking behaviours often make reference to the wider common good because these behaviours, such as running red lights to avoid interactions with cars, can make cycling safer and more efficient. While participants talked about the similarities in the ways that e-scooter riders and cyclists move through space, some participants did not see e-scooter riders' rule-breaking behaviours as contributing to the common good. Rather rule-breaking behaviours, such as riding at fast pace or with more than one person on an e-scooter, were described as maximising personal gain, highlighting why participants emphasised the need for enforcement.

When discussing the inadequacy of the current e-scooter regulations, participants acknowledged the challenges of regulating e-scooters. They highlighted the need to improve e-scooter regulations and to also balance different interests through regulation. Some participants held the view that the responsibility for coordinating encounters should be shared between e-scooter riders and pedestrians. Existing research has discussed how codes of conduct that regulate a single mode of transport can be problematic, for example, codes of conduct that seek to control the movement of cyclists remove the responsibility of sharing space from other path users (Delaney et al., 2017), and portray cyclists as causing problems rather than experiencing them (Brown, 2012). Furthermore, codes of conduct such as these are described as reinforcing the liminal position of cycling (Brown, 2012). Paul talked about how setting expectations for sharing the path could serve to normalise e-scooter riding in pedestrian spaces. He referred to e-scooter riders and pedestrians taking joint responsibility by following the left-hand rule:

> *…a campaign around sticking to the left, both for the scooters and the pedestrians would feel sort of fairer because it is pedestrians, the pedestrians may get a bit peeved I suppose, but the scooters would feel like they are being validated a bit, they're not just being always criticised for being on the footpath, they are saying "well you're going to be on the footpath… we expect you to be on the left" (Paul, e-scooter rider)*

A study by Cook and colleagues (2016a) also discusses the issue of responsibility, and highlights how some runners held the diplomatic view that both runners and pedestrians should be responsible for negotiating encounters, because of the perception that runners should be expected in pedestrian spaces (Cook et al., 2016a). However, as discussed in the previous chapter, e-scooter riders were often portrayed as out of place in different transport spaces. Some pedestrians expressed that e-scooter riders should take responsibility for negotiating encounters with pedestrians because they are the minority in pedestrian-dominated spaces and cause pedestrians to feel vulnerable, highlighting the challenges of normalising and regulating the use of e-scooters on the footpath. Cushla also commented on the need to balance different interests, for example, by not undermining the positive attributes of e-scooters through regulation:

> *…you don't want to regulate something that's basically relatively harmless and it's not too bad for the environment, um, it's more about, I think, people just being aware and being courteous on the footpaths… (Cushla, pedestrian)*

Cushla's preference for encouraging path users to be *"courteous"* and *"aware"* relates to existing research that identified transport users' support for a code of conduct, rather than an over-regulated environment, which was discussed in Chapter 1 (Active Mobility Advisory Panel, 2016; Delaney et al., 2017). Cushla was concerned that regulating the use of e-scooters could inconvenience or discourage e-scooter riders, and drew attention to the need for those making regulations to consider the potential environmental benefits of e-scooters. A recent study has suggested that the introduction of e-scooter regulations could deter frequent users of e-scooters from riding (Lo et al., 2020). As discussed in the previous chapters, e-scooter riders enjoyed being able to maintain their momentum and weave through transport spaces, meaning that regulating the speed of e-scooters and where they can be ridden could compromise the enjoyment of riding. Furthermore, a participant raised the issue of temporality and suggested that regulating the use of e-scooters on footpaths may be appropriate at busy times of the day, however, these rules are likely to be an inconvenience during quieter periods. While the participants' accounts highlighted the challenges of regulating e-scooters, the implementation of regulations could improve pedestrians' experiences of walking by providing clarity and the perception of safety.

E-scooter riders and pedestrians described the riskiness of sharing transport space and how they took responsibility for their own safety. Participants suggested that the government should take greater responsibility in managing the risks of sharing the path, however, they also acknowledged the challenges of regulating e-scooters. They commented on the need to balance government responsibility and individual responsibility, enforcement and encouragement, and the interests of e-scooter riders and pedestrians. However, creating regulations that are appropriate for both e-scooter riders and pedestrians is problematic because of their divergent experiences and expectations of being on the move, as discussed in Chapter 4. Furthermore, it is important to consider the implications of regulating e-scooters for e-scooter riders' and pedestrians' travel practices, and the ambition of transitioning towards a healthy and sustainable transport system.

Conclusion

This chapter has explored the common resources of space and mobility and how these were experienced in relation to economic and political structures. E-scooter riders' and pedestrians' experiences highlight issues with the sharing of space, responsibility and e-scooters. Some of these issues can be attributed to the sudden popularity of e-scooters, which has highlighted the shortcomings of the existing e-scooter regulations and business model of shared e-scooter companies. The e-scooter riders' and pedestrians' accounts suggest that changes could be made to these political and economic structures to improve their experiences of being on the move and sharing space. While the participants suggested that these changes could contribute to the common good, the overriding issue still remains that individuals move in ways that serve their own interests.

Chapter 7: Concluding comments

The purpose of this study was to understand how pedestrians and e-scooter riders experience sharing transport space, and what their experiences mean for transitioning towards healthy and sustainable transport systems. Existing e-scooter studies have drawn on quantitative research methods to investigate environmental and health impacts, and have questioned the benefits of e-scooters in view of the types of trips that are displaced by e-scooter riding and the physical injuries associated with e-scooters (Hollingsworth et al., 2019; Rivara, 2019). However, qualitative research methods are important for exploring the experiential dimensions of e-scooter riders and pedestrians sharing space, the social contexts of their encounters and the implications for travel practices. Analysis of conversations with participants highlighted the complexities of e-scooter riders' and pedestrians' experiences, and showed how their experiences can be made sense of at different scales, from micro-level interactions to macro-level structures. E-scooter riders' and pedestrians' accounts of the immediacy of interactions draw attention to their divergent experiences and expectations of being on the move, and the challenges of communicating and coordinating encounters. While interpreting other path users' spatial practices could be difficult, e-scooter riders and pedestrians drew on meanings about spaces, people and objects to make sense of the competencies and legitimacy of path users, and the utility of their trips. E-scooter riders and pedestrians also described some path users as exhibiting individualistic behaviours, and associated such behaviours with political and economic structures. This research has generated new insights about e-scooter riders and pedestrians sharing space that are useful for governments making decisions about how to support and encourage healthy and sustainable travel practices.

This chapter provides concluding comments to this research project. The chapter begins by discussing the findings of this research in relation to two overarching themes: "blurry boundaries" and "the system of automobility." The first section outlines the ways that e-scooters blur the boundaries of transport categories and spaces, and how this creates uncertainties for e-scooter riders and pedestrians sharing space. The next section discusses the system of automobility and how it shapes the social and spatial organisation of e-scooter riders' and pedestrians' encounters. Following this, I provide a critical commentary of recommendations made by the government to improve the safety and accessibility of transport spaces used by active and micromobility modes (New Zealand Transport Agency, 2020).

Finally, I outline potential areas of future research and provide a conclusion to this research project.

Blurry boundaries

The relative novelty of e-scooters, the lack of designated space for their use and unclear e-scooter regulations mean that e-scooters disrupt transport systems and spaces (Gössling, 2020a). Through urban planning and design, transport spaces produce "subtle" boundaries that demarcate who belongs in these spaces and who is excluded (A. Jensen, 2013). The current e-scooter regulations in New Zealand allow e-scooter riders to blur the boundaries between transport spaces and ride in spaces primarily for car drivers, cyclists and pedestrians. The participants' accounts of e-scooter riders' use of different spaces suggest that the boundaries between transport spaces are more than "subtle," as they described e-scooter riders transgressing these boundaries. Encounters between transport users are mediated by infrastructure (Simpson, 2017), for example, participants drew on the rationale that "footpaths are for pedestrians" to contest the use of e-scooters in pedestrian spaces, contrasting with their accounts of the openness to sharing space with e-scooter riders on designated shared paths. While e-scooter riders were constructed as transgressive because they use transport spaces primarily designed for another mode of transport, blurring the boundaries of transport spaces is a common transport experience. Other transport users move in improvisational and opportunistic ways, such as "jaywalking" pedestrians or cyclists riding on the footpath, highlighting the complexities of endeavouring to delineate boundaries (Jones, 2005). The participants' contestation of e-scooters and their emphasis of the boundaries between transport spaces could represent their attempts to claim space and categorise transport modes, however, categorising transport modes and spaces is problematic because transport users blur boundaries.

E-scooters are an "in-between" mode of transport; they are used for recreation and for everyday transportation, and they share qualities with both motorised and active transport. Although this study has highlighted e-scooter riders' and pedestrians' diverse experiences, e-scooter riding does share some characteristics with walking since e-scooter riders ride on footpaths and in an upright posture similar to pedestrians (Tuncer & Brown, 2020). However, participants in this study more often drew attention to the similarities that e-scooter riding shares with cycling and driving. The ways that e-scooters blur the boundaries with cars and bicycles, and create tension in spaces shared with pedestrians, are discussed below. Furthermore, shared e-scooter services

fill gaps in the existing provision of transport services, and blur the boundaries between public space and private space, and between physical space and virtual space (Spinney & Lin, 2018; Stehlin et al., 2020). Although the ways that e-scooters blur boundaries could make e-scooter riding an attractive transport option, because they are a fun and convenient alternative to existing modes of transport, this blurriness creates challenges for determining where e-scooters belong in the transport system.

Cycle ways are often considered an appropriate space for the use of e-scooters (Gössling, 2020a). E-scooters and bicycles share some characteristics, including their speed and physical dimensions, and there are also similarities in the ways that pedestrians experience sharing space with these two modes of transport. There are parallels between the findings of the current study and existing research that has investigated pedestrians' and cyclists' experiences of sharing space. This research drew attention to the ways that e-scooter riders flow through space and seek to maintain their momentum, which is akin to how Delaney (2016) describes cyclists using designated shared paths. Encounters between e-scooter riders and pedestrians were characterised by uncertainty and ambiguity because of the challenges of interacting and establishing rights and responsibilities, and this corresponds with previous research that examined encounters between cyclists and pedestrians (Brown, 2012; Simpson, 2017). Yet current regulations in New Zealand permit e-scooters to be used on the footpath, whilst bicycles are restricted from using these spaces. In comparison to bicycles, the use of e-scooters on the footpath may be considered more appropriate because an e-scooter rider can more easily dismount and walk with their e-scooter (Tuncer et al., 2020), however, pedestrians in this study raised concerns about the way that e-scooter riders travel in close proximity and blend in with pedestrians. Furthermore, the differences in where e-scooters and bicycles are permitted to be used could mean that e-scooter riding appeals to a wider demographic than cycling, for example, the ability to ride an e-scooter on the footpath could provide e-scooter riders with a sense of safety (Curl & Fitt, 2020). Riding an e-scooter on the footpath may also mean that e-scooter riders feel that there is less of a need to wear specialist clothing and equipment, which can be a barrier to cycling. The similarities between e-scooters and bicycles may support arguments for e-scooter riders sharing space with cyclists, however, there is a need to pay attention to the differences between e-scooter riding and cycling and what these differences mean for travel practices and sharing space with pedestrians.

E-scooters have the potential to "transform" into the other modes of transport that they share space with (Tuncer & Brown, 2020), however, they also have the potential to transform the

dynamic of transport spaces. E-scooter riders' and pedestrians' experiences of sharing space highlight the ways that the boundaries between the road and path have become blurred. The "motorisation of the path" has occurred with the presence of motorised transport and with practices of using the road being replicated on the path. The renegotiation of norms on the path could alleviate tensions between e-scooter riders and pedestrians, and represent a legitimisation of e-scooter riders. However, both pedestrians and e-scooter riders questioned the legitimacy of e-scooter riders in pedestrian spaces. Pedestrians contested being accountable to e-scooter riders, as moving in an orderly and defensive manner disrupted their expectations of free and safe passage on the footpath. E-scooter riders acknowledged their use of the path was contested and attempted to demonstrate their legitimacy on the path by displaying "good" behaviour and being accountable to pedestrians. Thus the power relations on the path are blurred; pedestrians adjusted to the road-like conditions on the path because of the threat e-scooters posed to their safety, while e-scooter riders adjusted their practices on the path in accordance with the threat of stigmatisation (Jensen, 2006). The motorisation of the path draws attention to the dominance of automobility, which plays a role in shaping the social relations and spatial practices on the path, and is discussed further below.

The system of automobility

In recent years, e-scooters have disrupted transport systems and spaces, however, disruption has occurred throughout history with constant change in urban mobility practices (Giles-Corti, Zapata-Diomedi, Jafari, Both, & Gunn, 2020). Urban mobility was disrupted by the introduction of cars, transforming public spaces previously used for social and commercial interactions into spaces of locomotion (King & Krizek, 2020). The introduction of cars has had a long-lasting impact because car-based travel is facilitated and entrenched by the system of automobility, and the technical and social interconnections that it is comprised of (Sheller & Urry, 2000). Assemblages of rules, codes and guidelines benefit those who are travelling by car; car drivers take precedence on city streets, while pedestrians and cyclists are required to give way to cars and are confined to the narrow margins of roadways (Bonham & Cox, 2010). Cars are associated with freedom, efficiency and convenience, because they can extend when and where people can travel, and have shaped the socio-spatial patterns of everyday life (Urry, 2006). The system of automobility, however, is dysfunctional because of its inherent fragilities, including traffic congestion, environmental degradation, resource depletion and road crashes (Böhm, Jones, Land, & Paterson, 2006). E-scooters share some characteristics with cars, they are motorised and facilitate a speed of travel that could be competitive with cars in busy urban

areas, and could play a role in encouraging shifts away from car-based travel by providing a low-carbon transport option. However, e-scooters alone will not address the spatialities and socialities of the system of automobility that create barriers to moving beyond it.

E-scooter riders' and pedestrians' experiences of sharing space contrasted with the notion that shared transport spaces are productive of sociable interactions (Hamilton-Baillie, 2008). Although participants described the conviviality and co-accomplishment of encounters, they commented on how some e-scooter riders exhibited a disregard for others. Car-based automobility is described as encouraging individualism, competition and aggression through the speed and motion of driving (Bauman, 2000). Similarly, participants characterised fast paced e-scooter riders as individualistic and neglectful of collective responsibilities. Speediness creates inequitable relations between transport users because it is not evenly distributed (Aldred, 2015), illustrated by e-scooter riders' encounters with car drivers, and pedestrians' encounters with e-scooter riders. The uneven speeds of e-scooter riders and pedestrians created challenges for flowing together and resulted in "shallow interactions," because opportunities for communication and coordination were limited (Te Brömmelstroet, Nikolaeva, Glaser, Nicolaisen, & Chan, 2017). Communication and coordination between e-scooter riders and pedestrians is often required on paths with limited space, however, high speed transportation also contributes to the scarcity of space (Illich, 1974), highlighted by the participants' emphasis on the need for personal space. While it is unclear whether e-scooter riders intentionally disregarded pedestrians, the participants' experiences draw attention to the incompatibilities of e-scooter riders and pedestrians sharing space and issues with the allocation of transport space.

E-scooter riders' use of footpaths redistributes space from pedestrians to a motorised mode of transportation, yet the opposite is needed to support low-carbon modes of transport. It has been argued that transport space should be taken from cars to accommodate micromobility modes to reflect the goal of reducing car-based travel (Gössling, 2020b; Living Streets Aotearoa, 2019b). The participants' accounts highlight how more space on paths shared by e-scooter riders and pedestrians could ease tensions between them, and the COVID-19 lockdown period offered an opportunity to reimagine how transport space could be distributed. During this period, people were generally confined to their homes and neighbourhoods, and the limited number of cars on the road meant that pedestrians and cyclists were able to spill over into the roadway, in order to maintain government mandated physical distance from one another (Wild, 2020). A study carried out in New Zealand identified that the lockdown altered the social and

environmental conditions of streets; respondents reported that there was less noise, they felt more relaxed, they experienced friendly interactions with others and there were new opportunities to engage in active transport (Wild, 2020). These experiences of lockdown contrast with the characterisation of car-dominated streets as "dead space," where social connection is inhibited by the cocooning of people inside their cars, and the unpleasant environments outside of cars mean that transport users are unwilling to use these spaces (Aldred, 2010). The lockdown period illustrated how a reduction in car-based travel has the potential to alter the distribution of transport space and social experiences for users of low-carbon forms of transport. However, this change in travel practices resulted from daily life being disrupted by a global pandemic, highlighting the socio-spatial factors and practices that contribute to the entrenchment of the system of automobility.

In a society that values car-based automobility, the overlapping characteristics of e-scooters and cars potentially make e-scooter riding an appealing transport option. E-scooters blur boundaries with cars; e-scooter riders' spatial practices on the path and their social interactions with pedestrians share some similarities with driving in an urban area. Producing e-scooter riding in the image of driving, however, potentially perpetuates the dominance of automobility, and the motorisation of the path reduces the space available for low-carbon forms of transport. The system of automobility delineates the boundaries of transport spaces, and these delineations do not currently accommodate micromobility modes, or reflect the need to transition towards low-carbon mobility.

The path ahead

Commentary on recommended regulations

Government agencies and researchers have recommended policies and regulations to improve the safety and accessibility of streets for e-scooter riders and pedestrians (New Zealand Transport Agency, 2020). This section offers a critical commentary of these recommendations in the light of the findings presented in the preceding chapters. The findings of this research reflect e-scooter riders' and pedestrians' experiences of the sharing space in Christchurch, meaning that the commentary in this section relates to the local conditions in Christchurch and may not be applicable to other cities. The sudden influx of e-scooters in New Zealand has provided impetus for rethinking how transport spaces are delineated and transport modes are regulated, and the Accessible Streets package has set out to accommodate e-scooters and other micromobility modes in the transport system (New Zealand Transport Agency, 2020). This

package proposed rules including permitting the use of bicycles on footpaths, the use of e-scooters in cycle ways and restricting the speed and use of e-scooters and bicycles on footpaths, which are discussed below.

Regulating modes of transport is challenging because this requires categorisation, and there are various ways that modes can be categorised, such as by speed, mass, type of propulsion, power output and wheel size (Lieswyn et al., 2017). The challenge of categorising modes of transport was highlighted by a rule proposed in the Accessible Streets package. The proposed rule would allow bicycles to be used on footpaths, with the intention of providing children with a safe space to cycle, however, this rule would also allow adult cyclists and e-bike riders to use the footpath. The NZTA considered the current regulations to be unfair because they allow adult e-scooter riders and mobility device users to use the footpath but not children riding bicycles (New Zealand Transport Agency, 2020). Implementing rules that allow bicycles, e-scooters and other micromobility modes to use footpaths, under certain conditions, may be considered advantageous because it represents a consistent approach to regulating these seemingly similar modes of transport, and could mean that these modes of transport appeal to people who are concerned about riding in close proximity to cars. However, allowing additional wheeled modes of transport to use the footpath could burden pedestrians. Although the Accessible Streets package has aimed to improve the safety and accessibility of footpaths, drawing on the findings of this study it seems likely that allowing bicycles on footpaths will add complexity to these spaces.

The Accessible Streets package also proposed allowing e-scooters to be used in cycle ways, including on cycle paths separated from the road and in cycle lanes painted on the road (Figures 1 and 2). This proposal corresponds to research that has highlighted the need for a "third space," separated from pedestrians and motorists, to accommodate e-scooters, cyclists and other micromobility modes (Fitt & Curl, 2019; J. Walker, 2018). Redefining cycle ways, and providing e-scooter riders and micromobility modes with designated transport space, could address e-scooter riders' lack of contextual legitimacy, however, this proposed rule may not translate into e-scooter riders using cycle ways. The challenges of e-scooter riders and pedestrians sharing space may persist because e-scooter riders may choose to continue riding on footpaths, and because some city streets lack bicycle infrastructure. Furthermore, previous research suggests that the name of a path can shape experiences of sharing space, for example, the terms "cycle path" and "cycle lane" imply that cyclists are the priority transport users in these spaces (Delaney et al., 2017). News articles and blogs have suggested rebranding cycle

ways as "mid speed lanes" or as the "the little road" to acknowledge the diversity of transport modes that could use these spaces, and to create expectations of sharing space (Rose, 2018; J. Walker, 2018). Similar to on footpaths, there are issues with e-scooters being contested in these spaces and displacing an active mode of transport, therefore there is a need for future research to investigate how cyclists and e-scooter riders experience sharing space, as discussed below.

The relative speed of e-scooters is a significant issue for pedestrians, which is recognised by researchers and the government who have recommended setting speed limits for micromobility modes in spaces shared with pedestrians (Lieswyn et al., 2017). The Accessible Streets package proposed a rule to restrict the speed of e-scooters and cyclists to 15km per hour on footpaths, however, this speed limit has been opposed by stakeholder groups (New Zealand Transport Agency, 2020). Living Streets Aotearoa contend that vehicles on the footpath should be ridden no faster than 6km per hour, a speed that is slightly faster than the average walking speed and this has the potential to deter e-scooter riders from using the footpath (Living Streets Aotearoa, 2020). Geofencing technology, which has been used in Christchurch to restrict where e-scooters can be ridden, as mentioned in Chapter 1, could also be used to control the speed of e-scooter riders in pedestrian spaces. Using geofencing technology could address the uncertainty of determining an appropriate speed to ride an e-scooter, an issue raised by the participants. However, geofencing technology is problematic because privately owned e-scooters are not subject to this technology and the set speed limit may be considered inappropriate in pedestrian spaces, as highlighted by the contrasting recommended speed limits from Living Street Aotearoa and the Accessible Streets package. Furthermore, the GPS systems used for geofencing can be inaccurate, for example, it is difficult to control the speed of e-scooters on footpaths and not in the cycle ways or roads adjacent to the footpath (Fearnley, 2020). Regulating the speed of e-scooters and the spaces where e-scooters can be used are both complex issues, which reinforces the importance of e-scooter riders riding considerately and being mindful of how others experience speed regardless of the regulations that are in place.

These proposed rules could be useful for improving e-scooter riders' and pedestrians' experiences of sharing space. However, systemic change is required to prioritise human-scaled forms of transport, including the redistribution of transport space and the restructuring of the system of automobility (Glaser, Krizek, & King, 2020). Countries, such as Germany, Denmark and the Netherlands, have designed cities that prioritise the needs of active modes of transport over the needs of cars, such as with the creation of dedicated transport infrastructure,

regulations that prioritise travel by bicycle and foot and land-use policies that encourage high-density development (Pucher & Buehler, 2008). The transport planning and regulations in these cities could create very different social and spatial environments for pedestrians and e-scooter riders to those discussed in the current study.

Opportunities for future research

There are potential areas of research that could provide further insight into e-scooter riders' experiences of sharing space with other transport users and the place of e-scooters in the transport system. Data collection for this research project took place in late 2019, approximately one year after shared e-scooter services were introduced in Christchurch, and many of the participants referred to the novelty of e-scooters and the disruption that they caused. A follow-up research project could investigate the ways that e-scooter riders' and pedestrians' experiences and perceptions of sharing space have evolved over time. This research project included one e-scooter owner and outlined some of the issues associated with the business model of shared e-scooter services; future research could investigate whether e-scooter ownership changes the dynamic of encounters between e-scooter riders and pedestrians. Further research could also take into account the consequences of the COVID-19 pandemic, such as e-scooters being promoted as a way to avoid using public transport, the normalisation of working from home, and fewer "problematic" tourists on paths as a result of the closure of New Zealand's borders, and how these factors impact on e-scooter riders and pedestrians sharing space. Furthermore, it would be useful to carry out a similar research project following the implementation of rules from the Accessible Streets package to understand the implications of regulating where and how e-scooters can be used.

The "mobilities turn" in social science research has prompted the use of "mobile methodologies" (Middleton, 2011b). Talk-based methods can be limited by the fleeting and often routinized experiences of being on the move that are difficult to relay in interviews (Cook et al., 2016a). Mobile methodologies, such as go-along and video methods, can be used to prompt conversations with participants about their experiences and provide insight into what happens between destinations (Spinney, 2009). Furthermore, mobile methodologies are drawn on to explore the immediacy of the embodied and sensory experiences of being mobile, and can be used in conjunction with talk-based methods to provide further details and contextual information about mobile experiences (Cook et al., 2016a). Mobile methods could be useful to explore the embodied experiences of e-scooter riders and pedestrians negotiating encounters,

such as their spatial practices and communication tactics, and their experiences of space and place. Recent studies have used go-along video methods to investigate how e-scooter riders negotiate urban spaces and their encounters with other transport users, including pedestrians (Hunter & Lloyd, 2020; Tuncer et al., 2020). Similar research could be carried out to visually capture both pedestrians' and e-scooter riders' experiences of sharing space.

As discussed above, accommodating e-scooter riders in cycle ways is recommended by researchers and in the government's proposed regulations, however, there is a need for research to explore how cyclists experience sharing space with e-scooter riders and other micromobility modes. Existing research and participants in this study have highlighted the similarities between bicycles and e-scooters, however, the participants in this study discussed the different travel practices of e-scooter riders and cyclists, such as the types of trips they take and the transport spaces that they ride in. E-scooter riders' use of cycle ways could cause tension between e-scooter riders and cyclists, especially if e-scooter riders contest cyclists' expectations of how cycle ways should be used. Therefore, exploring e-scooter riders' and cyclists' experiences through qualitative research could provide insights into the similarities and differences in their experiences, which is important in the wider context of encouraging engagement in low-carbon transport.

Conclusion

Governments have been excited by the opportunity that e-scooters present for reducing reliance on car-based travel, especially as an alternative to public transportation in the wake of the COVID-19 pandemic (Perry, 2020). However, their approach of rapidly introducing e-scooters into city streets means that governments often assume, or do not consider, where e-scooters belong in the transport system and how they fit into wider society. This research has drawn attention to the complexities of e-scooter riders' and pedestrians' experiences of sharing space, as they are required to negotiate their differences in the limited space on paths. Exploring e-scooter riders' and pedestrians' experiences highlights how encounters between them are mediated by norms and meanings, as well as the regulatory and commercial contexts of e-scooters. Their encounters are complicated by the ways that e-scooters blur boundaries with other modes of transport and transgress the boundaries of transport spaces. E-scooter riders' and pedestrians' contestations of space occur within the boundaries delineated by the system of automobility, which also plays a role in shaping the social environments on and off the path. Systemic change is required to support active and micromobility modes, and transform the

system that entrenches reliance on car-based automobility, and creates barriers for transitioning towards healthy and sustainable travel practices (Glaser et al., 2020). The current study highlights the need for governments to consider the complexities of micro-level interactions in macro-level decision making.

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Appendices

Appendix A: Information sheet for participants

[Reference Number: D19/277]
[4/10/2019]

ELECTRIC SCOOTERS AND PEDESTRIANS SHARING SPACE
INFORMATION SHEET FOR PARTICIPANTS

Thank you for showing an interest in this project. Please read this information sheet carefully before deciding whether or not to participate. If you decide to participate we thank you. If you decide not to take part there will be no disadvantage to you and we thank you for considering our request.

What is the Aim of the Project?

Electric scooters (e-scooters) have become a popular form of transport, however, e-scooters being used on footpaths causes safety concerns. The aim of this research is to understand how sharing space on footpaths is experienced by people riding e-scooters and people walking. We are interested in how sharing space on footpaths impacts riding e-scooters and walking as forms of transport. This project is being undertaken as part of the requirements for Hebe Gibson's Master of Public Health.

What Types of Participants are being sought?

We are interested in speaking to people who have experiences of using electric scooters, who have encountered them on the footpath, or both. Participants will be selected to take part in the research based on their experience of sharing space with other footpath users. As a token of appreciation for your time, you be given a $25.00 voucher for the Warehouse.

What will Participants be asked to do?

Should you agree to take part in this project, you will be asked to take part in a one-on-one interview with Hebe Gibson. This will take up to one hour to complete and will involve discussing your transport experiences. It is highly unlikely that there will be any psychological risks associated with taking part in this research, however, if you feel uncomfortable or want to stop the interview you can do so at any point without any disadvantage to yourself.

What Data or Information will be collected and what use will be made of it?

Contact details will be collected from participants for practical reasons. In the interview, you will be asked about your transport choices and experiences of sharing space with other footpath users. The purpose of collecting this data is to understand the impacts that sharing space on footpaths has on walking and riding e-scooters as forms of transport. You will also be asked for your age, gender and ethnicity, which will be collected for monitoring purposes. The interviews will be recorded and then the audio recordings will be transcribed.

After interviews have taken place, interview transcripts will be returned to you via email. You will have two weeks to check the accuracy of them and make any changes, if you wish to do so. If there is no response to the email it will be considered that you are happy and do not wish to make any changes. A thematic analysis of the transcribed data will be carried out and then the findings will be written up into a thesis. Quotes from the interviews will be used in the completed research, however, you can choose a pseudonym for yourself to preserve your anonymity.

This project involves an open-questioning technique. The general line of questioning will include your experiences of using or encountering e-scooters on footpaths. The precise nature of the questions that will be asked have not been determined in advance, but will depend on the way in which the interview develops. Consequently, although the Department of Population Health is aware of the general areas to be explored in the interview, the Committee has not been able to review the precise questions to be used. In the event that the line of questioning does develop in such a way that you feel hesitant or uncomfortable you are reminded of your right to decline to answer any particular question(s).

The results of the project will be published as a master's thesis and will be available in the University of Otago Library (Dunedin, New Zealand) and may be published in academic journals, but every attempt will be made to preserve your anonymity. A summary of the results will be sent to you via email once the study has been completed.

The data collected will be securely stored in such a way that only the student researcher and supervisors will be able to gain access to it. Data obtained as a result of the research will be retained for **at least 5 years** in secure storage. Any personal information held on the participants, such as contact details and audio recordings, may be destroyed at the completion of the research even though the interview transcripts derived from the research will, in most cases, be kept for much longer or possibly indefinitely.

Can Participants change their mind and withdraw from the project?

You may withdraw from participation in the project up until the time your data are collated with the data from other participants. This is likely to be February 2020.

What if Participants have any Questions?

If you have any questions about our project, either now or in the future, please feel free to contact either:-

Hebe Gibson

Department of Population Health

University Telephone Number: Phone or text: 0210 293 5476

Email Address: gibhe412@student.otago.ac.nz

Angela Curl

Department of Population Health

University Telephone Number: 03 364 3626

Email Address: angela.curl@otago.ac.nz

This study has been approved by the Department stated above. However, if you have any concerns about the ethical conduct of the research you may contact the University of Otago Human Ethics Committee through the Human Ethics Committee Administrator (ph +643 479 8256 or email gary.witte@otago.ac.nz). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.

Appendix B: Participant consent form

ELECTRIC SCOOTERS AND PEDESTRIANS SHARING SPACE
CONSENT FORM FOR
PARTICIPANTS

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:-

1. My participation in the project is entirely voluntary;

2. I am free to withdraw from the project at any time up until my data have been collated (February 2020) without any disadvantage;

3. Personal identifying information, such as audio recordings and personal details, will be destroyed at the conclusion of the project but any data on which the results of the project depend (e.g. interview transcripts) will be retained in secure storage for at least five years;

4. This project involves an open-questioning technique. The general line of questioning includes your experiences of using or encountering e-scooters on footpaths. The precise nature of the questions which will be asked have not been determined in advance, but will depend on the way in which the interview develops and that in the event that the line of questioning develops in such a way that I feel hesitant or uncomfortable I may decline to answer any particular question(s) and/or may withdraw from the project without any disadvantage of any kind;

5. I will receive a $25.00 voucher for the Warehouse as a token of appreciation for my participation;

6. The results of the project will be published and will be available in the University of Otago Library (Dunedin, New Zealand) and may be published in academic journals, but every attempt will be made to preserve my anonymity.

I agree to take part in this project.

....
(Signature of participant) (Date)

.....
(Printed Name)

Appendix C: Data collection questions

1. **I identify my gender as…**

_____

2. **When were you born?**

_____

3. **Which ethnic group do you belong to?**

Mark the space or spaces which apply to you.

☐ New Zealand European
☐ Māori
☐ Samoan
☐ Cook Island Māori
☐ Tongan
☐ Niuean
☐ Chinese
☐ Indian
☐ Other

Please state _____